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The Neotropical Orb-Weaving Spiders of the
Genus *Alpaida* (Araneae: Araneidae)

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THE NEOTROPICAL ORB-WEAVING SPIDERS OF THE GENUS *ALPAIDA* (ARANEAE: ARANEIDAE)

HERBERT W. LEVI

ABSTRACT. *Alpaida* species are diurnal orb-weavers with diverse habits and diverse webs. They are known from the Neotropics only. Adult *A. quadrilobata* are reported to be associated with a certain plant species and, when disturbed, dive into a pool of rainwater at the base of its leaves. Perhaps other species have similar specific habits.

Alpaida is related to *Edricus* based on the structure of the genitalia, but differs by the glabrous brightly colored body and from most araneids by the fusion of radix, embolus and terminal apophysis and by the presence of a paramedian apophysis in the male palpus.

There are 134 known species, 40 previously known, 94 new. That is, fewer than 30% had previously been known, the same proportion as in my 1986 revision of *Chrysometa*. There are 25 new synonyms. The 40 previously known species had been placed incorrectly in 12 different genera, many of the genera not otherwise represented in the Neotropics. The names of the four common, widespread species *A. bicornuta*, *A. leucogramma*, *A. truncata* and *A. veniliae* had 13 synonyms; these species had previously been known under a total of 17 names in various areas.

INTRODUCTION

Alpaida is a large genus and may eventually contain 200 to 300 species. There are no distinct species groups and it would be difficult to split the genus, except by taking one or two species out. But the size of genera is controversial and subjective. In other animal groups (e.g., birds) a large number of genera has not been of help in indicating relationships, nor does it contribute to the stability of names (Levi, 1973: 474). A practical aspect of this issue is the need for museum staff to be able to recognize genera in incoming collections, sort them out and make them available for study. Those spider families with the most numerous genera (Salticidae and Liny-

phiidae) remain the most neglected, and splitting of genera into groups with only one or two species would not make their study more manageable.

The genus *Alpaida* in Bonnet's catalog (not Roewer's) contains only one species, although it is here seen to be one of the largest neotropical araneid genera, including many common species. On the basis of superficial similarities, the known *Alpaida* species had previously been described and assigned such diverse generic names as *Araneus* (*Epeira*, *Aranea*), *Cercidia*, *Drexilia*, *Edricus*, *Epeirella*, *Lariniacantha*, *Metepeira*, *Miranda*, *Salassina*, *Singa*, *Verrucosa* and *Wixia*.

Seventy % of the *Alpaida* species are new. This is a much larger percentage than anticipated and is comparable with the number of new species of *Chrysometa* (Levi, 1986). If other neotropical araneid genera have a similar percentage of new species, I will have greatly underestimated the total number of neotropical species.

MATERIALS AND ACKNOWLEDGMENTS

Any revision depends on reference to far-flung materials and is possible only with the assistance of many cooperators. I am grateful to the curators who made collections available. In many cases, huge collections of valuable specimens were entrusted to the mails. The following list identifies the collections used; abbreviations for the institutions are mostly the standardized ones (Leviton et al., 1985), and private collections are listed by the initials of the owner.

- | | | | |
|---------|--|--------|---|
| (AMNH) | American Museum of Natural History, New York, N. Platnick; | (MZUF) | Museo Zoologico, Università, Florence, S. Mascherini; |
| (BMNH) | British Museum (Natural History), P. Hillyard, F. Wanless; | (MZUT) | Museu ed Istituto du Zoologia Sistemática, Università di Torino, O. Elter; |
| (CAS) | California Academy of Sciences, W. J. Pulawski, D. Ubick; | (NHRM) | Naturhistoriska Riksmuseet, Stockholm, T. Kronstedt; |
| (CUC) | Cornell University collections kept in the AMNH, N. Platnick; | (NMB) | Naturhistorisches Museum, Basel, E. Sutter; |
| (DU) | D. Ubick; | (PAN) | Polska Akademia Nauk, Warszawa, A. Riedel, W. Staręga, J. Proszynski, A. Słowjewska; |
| (IRSNB) | Institut Royal des Sciences Naturelles de Belgique, Brussels, L. Baert; | (REL) | R. E. Leech; |
| (MACN) | Museo Argentino de Ciencias Naturales, Buenos Aires, E. A. Maury; | (SMF) | Forschungsinstitut Senckenberg, Frankfurt, M. Grashoff; |
| (MCN) | Museu de Ciências Naturais, Porto Alegre, A. Lise, E. Backup; | (USNM) | National Museum of Natural History, Smithsonian Institution, Washington, J. Coddington; |
| (MCZ) | Museum of Comparative Zoology; | (ZMB) | Zoologisches Museum der Humboldt Universität, Berlin, M. Moritz; |
| (MECN) | Museo Ecuatoriana de Ciencias Naturales, Quito, L. Avilés; | (ZMK) | Zoologisk Museum, København, H. Enghoff; |
| (MEG) | M. E. Galiano; | (ZSM) | Zoologisches Staatsmuseum, Munich. |
| (MHNG) | Museum d'Histoire Naturelle, Genève, V. Mahnert; | | |
| (MHNM) | Museo de Historia Natural de Montevideo, R. M. Capocassale; | | |
| (MIUP) | Museo de Invertebrados, Universidad de Panamá, Panama, D. Quintero A.; | | |
| (MLP) | Museo de Universidad Nacional, La Plata, R. F. Arzopide; | | |
| (MNHN) | Museum National d'Histoire Naturelle, Paris, J. Heurtaut, J. Kovoov; | | |
| (MNHNP) | Inventario Biología Nacional, Museo Nacional de Historia Natural, Asunción, J. Kochalka; | | |
| (MNRJ) | Museu Nacional, Rio de Janeiro, A. Timotheo da Costa; | | |
| (MZSP) | Museu de Zoologia da Universidade de São Paulo, P. Vanzolini, L. Neme, J. L. M. Leme; | | |

The collections of Maria Elena Galiano used are now deposited in MACN. An attempt was made to deposit types of names in the country where collected in museums that can make the specimens available.

Numerous collectors supplied specimens and notes. Especially important information on habits and habitats came from the collections of W. Eberhard, W. Maddison, D. Smith and J. Kochalka. J. Gruber and P. Vanzolini provided information on localities; A. A. Lise provided needed literature. L. R. Levi and D. Woessner read and improved the wording. J. Coddington made numerous suggestions for the manuscript. C. Villars, S. Hunt and D. Woessner typed various drafts. The research was supported in part by National Science

Foundation grant BSR 83 12772. Publication costs of this study were covered in part by the Wetmore Colles Fund.

METHODS

The methods of this revision are the same as used for previous studies (Levi, 1985, 1986). The internal female genitalia are not illustrated as two views of the outside of the epigynum, and the color pattern and the shape of the abdomen are sufficient in *Alpaida* to separate the females. The palps are illustrated in mesal view only, with the cymbium on the left and median apophysis and terminal apophysis showing.

I indicated the specimens that were described and illustrated. But illustrations were often improved after finding lightly sclerotized specimens that showed seams or structures not seen in the original specimen.

Males were matched with females by their appearance and by matching their collecting sites, but this has been difficult and errors may have been made.

Because specimen labels are frequently very old and handwritten, difficulties are commonly encountered in finding localities in gazetteers and on maps. Often there is no country or province given and there may be misspellings; in some cases spellings or names of localities have changed, some settlements have disappeared or there may be several localities with the same name. The gazetteers listed in Levi (1985) and our collection of maps have been most useful. Some errors in placing localities in my past revisions were noticed.

The type specimens of names were examined over a period of 20 years. Since it was more important at the time to make illustrations and make certain that all syntypes of a name were the same species, I often neglected recording their number. Lectotypes are only designated when a mixture of species is suspected, not as a routine.

Alpaida O. P.-Cambridge

Alpaida O. P.-Cambridge, 1889: 52. Type species by monotypy *A. conica*. Levi, 1976: 388. The name is feminine.

Parepeira Mello-Leitão, 1933: 41. Type species *Epeira albostrigata* Keyserling (= *A. leucogramma*).

Subaraneus Caporiacco, 1948: 661. Type species by original designation *Epeira veniliae* Keyserling (= *A. veniliae*).

Lariniacantha Archer, 1951: 15. Type species by original designation *Epeira grayi* Blackwall (= *A. grayi*).

Subedricus Caporiacco, 1954: 84. Type species by original designation *Epeira nigropostulata* O. P.-Cambridge (= *A. truncata*).

Note. I synonymized several generic names in 1976, but find now that *A. calix* Walekenaer, redescribed and illustrated in 1976, does not belong in the genus. It lacks the characteristic paramedian apophysis in the male palpus, and the terminal apophysis is a thin blade attached on hematochocha and lying parallel to the embolus (Levi, 1976: 389, figs. 143, 144), rather than the large sclerotized structure fused to embolus and radix found in *Alpaida*. It belongs with some other neotropical species in a new genus yet to be named.

Diagnosis. *Alpaida* species are recognized by the glabrous body, orange carapace (sometimes with dark pattern), and, in females, by the wide head with eyes ringed in black (Fig. 2). The black eye rings are not drawn out anteriorly and posteriorly as in *Araneus* species. In most species I have seen alive, the abdomen has red, green, yellow and orange colors that wash out in alcohol. The epigynum is usually a transverse sclerotized structure, with posterior lips, its middle portion drawn out into a triangular lobe or scape (Fig. 7). In posterior view there is a median plate framed by a lip (Fig. 8). The openings are on each side between plate and lips. In many species the lobe or scape is broken off in the course of mating (Figs. 149, 150). The epigynum is simpler and shorter than that of *Edricus* (?=*Wagneriana*). (At present, I do not know the correct name for the group which includes *Wagneriana tauricornis*.)

The male has a narrow head (Fig. 5). The palpus has the radix, embolus and terminal apophysis fused into one sclerite (Fig. 10), a character not seen in other araneid genera. In both *Alpaida* and *Edricus*, the palpus has a mushroom-shaped parame-dian apophysis (Fig. 10), its top showing between the cymbium and embolus (Figs. 10, 43, 56). The stalk of the parame-dian apophysis is attached to the conductor. *Alpaida* males differ from *Edricus* males by having a glabrous orange carapace, sometimes with a dark pattern on the head, while the male of *Edricus* is hirsute with an orange head and the sides of the carapace darker. The palpus of the *Edricus* male has a much larger, more complex median apophysis (Levi, 1976, figs. 69, 70) than has the palpus of *Alpaida*.

Alpaida is separated from the glabrous species of *Metazygia* and *Mangora* by the structure of the genitalia (see below); also, females of *Mangora* have a narrower head and *Mangora* males and females both have feathered trichobothria on the third tibiae.

Description of female. Color. The carapace is usually orange, sometimes yellowish, often with a black or dark brown pattern on the head. The eyes are always ringed by black; often the entire median ocular area is black (Fig. 41). The labium and endites are orange to black; the sternum is orange or black; the coxae are sometimes black, but more often light orange, sometimes contrasting with the sternum and more distal leg articles. The distal leg articles are uniform yellow to orange or have dark rings. In live spiders, the abdomen has greens, reds and yellows that wash out in alcohol, leaving white and black pigment (Plate 1). In specimens stored in alcohol, the venter may be uniformly dark or light orangish-gray; often there is a light longitudinal line on each side and almost always a pair of white pigment spots on each side of the spinnerets. The spinnerets are usually darker than the venter of the abdomen.

Structure. The carapace lacks hairs, or has only a few (with some exceptions). The head is wide and bulging, with the median

eyes on a slight hump (often all black), and the lateral eyes on a joined black tubercle. Usually all eight eyes are subequal in size or the lateral eyes are slightly smaller than the medians; in a few species the posterior median eyes are larger than the others and rarely the anterior median eyes are largest. Anterior medians and posterior medians are about their diameter apart and more than their diameter from the laterals. The thoracic depression is shallow. The chelicerae are strong and armed with three or four teeth on each margin. The first legs are usually the longest and in some species the fourth legs are slightly longer than the first. The abdomen shape is diverse, almost always longer than wide, rarely spherical, often with shoulder humps, an anterior median hump, or posterior humps, or drawn out posteriorly; rarely with lateral lobes (Figs. 328, 493). The abdomen sometimes has one to four pairs of slightly sclerotized thorns or spines, or an anterior median spine (Figs. 13, 71, 73). Many species seem to have paired lateral humps when the abdomen is emaciated, but the lobes do not show when the abdomen is full (Figs. 369, 370).

Description of Male. Color. Coloration of males is as in females, with the abdomen pattern less distinct.

Structure. Unlike most other araneids, *Alpaida* males often have the carapace larger than that of females and sometimes the total length of the body is longer (Figs. 42, 202). The male's head is narrow in front, unlike the female's, and there is a longitudinal thoracic line with a short posteriorly directed branch on each side in the middle (Fig. 5). The chelicerae are smaller than those of females (Figs. 4, 6). The endite always has a tooth facing a tooth on the palpal femur. The first coxa has a hook that fits into a groove on the second femur (Fig. 6); the hook and groove are lacking only in *A. delicata*. The fourth coxae or trochanters may be armed with short stout macrosetae. The second tibiae are the same thickness as the first or only slightly thicker, with a few indistinct macrosetae. *Alpaida truncata* has the second



Plate 1. Upper left, female *Alpaida graphica*, carapace orange, abdomen blueish black, 8 mm total length. Upper right, female *A. bicornuta*, carapace orange, abdomen with yellow-white patches on orange; tips of spines, posterior tip and sides black, 5 mm total length. Lower left, female *A. truncata*, carapace and legs orange-yellow, abdomen yellow with black patches, 8 mm total length. Lower right, immature *A. quadrilobata*, orange with black patches, 6 mm total length. (photo upper left W. Maddison, upper right J. Coddington.)

tibia modified (Fig. 578), and *A. delicata* has the distal ends of the first and second tibia swollen and armed with macrosetae (Fig. 478). (The anatomical differences of

A. delicata are expected to reflect differences in mating behavior, a promising research project.)

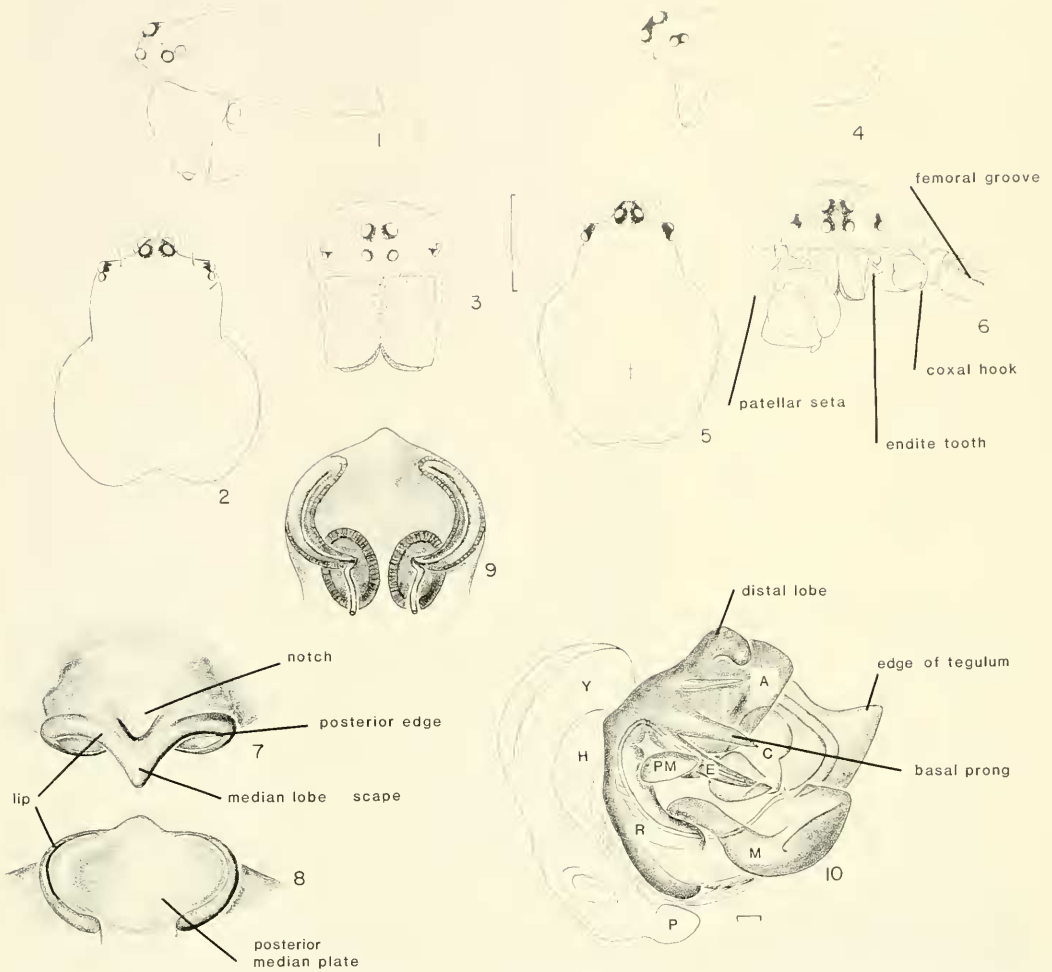
The palpal femur has a basal tooth fac-

ing the tooth on the endite (Fig. 6). The palpal patella has at least one long macroseta (Fig. 6); several species (*chickeringi*, *almada*, *grayi*) have two. The palpal tibia has a slight bulge on one side underneath the median apophysis (Figs. 18, 30). The palpal tibia of *A. delicata* has the characteristic bulge, but is longer than wide (Fig. 477), as is usual in Tetragnathidae, but unusual in the Araneidae. The cymbium is not modified, but the paracymbium may be more elaborate than a hook (this character was not examined in detail because it shows only at a difficult-to-repeat angle from "below" the palpus). That the cymbium never has a tarsal organ is easily seen in *Alpaida* because there are fewer setae than in other Araneidae. The median apophysis (M in Fig. 10) is smaller than that of *Edricus* and usually elongate, often with a blunt tooth at the end toward the cymbium, sometimes with a keel. The median apophysis never has sharp spines or the flagella found in species of genera related to *Araneus* (listed below). The axis of the radix (R in Fig. 10) is often nearly parallel to that of the cymbium. The embolus is knife-blade shaped and similar in many species (E in Fig. 10); in only a few species is it curved (Fig. 215) or filiform (Fig. 592). The tip of the embolus is always supported by the conductor (C in Fig. 10). The conductor is large, complex, and has the mushroom-shaped paramedian apophysis attached to its base (PM in Fig. 10). The attachment is hidden by the embolus. The complex, often very large terminal apophysis (A in Fig. 10) is fused with the embolus, without a joint or distal hematodocha. Terminal apophysis and embolus are fused with the radix (R in Fig. 10); if separated and broken off, the conductor and median apophysis also come off as the conductor is fastened only by a stalk to the tegulum and the median apophysis by an hematodocha. (The fusion of sclerites was checked in the larger species and also in *A. anchicaya*, *conica*, *delicata*, *tuonabo* and *chickeringi*. The male of *A. murtinho* has a joint between the radix and embolus-terminal apophysis.)

Relationship. The presence of a paramedian apophysis in the palpus, the lack of pointed spines on the median apophysis and the reduction or lack of distal hematodocha place this genus into a group with *Eriophora*, *Verrucosa*, *Acanthepeira*, *Edricus*, *Cyclosa*, *Wixia*, *Micrathena*, *Chaetacis* and *Gasteracantha*. I consider these characters synapomorphies of the group. *Scoloderus* and *Acacesia* have a similar median apophysis and lack of distal hematodocha, but are distinct in lacking a paramedian apophysis, perhaps a secondary loss. In contrast, *Araneus*, *Mangora*, *Nuctenea* (= *Larinioides*), *Neoscona*, *Aculepeira*, *Cercidia*, *Kaira*, *Larinia*, *Singa*, *Eustala*, *Metazygia* and *Metepeira* lack the paramedian apophysis and have a distal hematodocha between embolus and terminal apophysis. Both characters are probably synapomorphies for these genera. *Edricus* (?= *Wagneriana*) shares with *Alpaida* the peculiar mushroom-shape of the paramedian apophysis, a synapomorphy of the two sister genera.

Since a number of genera have genitalic structures similar to those of *Alpaida*, a study of what is primitive or specialized in these groups will be postponed until a later time as this paper is one of a series on related groups. Also more on the relationship with other genera will be learned after a second look at *Araneus* and genera not close to *Alpaida*.

Natural History. Webs and habits are more diverse than in species of other araneid genera. W. Eberhard (in personal communication) summarizes *Alpaida* webs: "Webs are generally more or less vertical, but vary widely in design. In some species the spider rests facing away from the orb in a curled leaf and monitors a signal line running to the hub (e.g., *A. truncata*, Plate 2). In others (e.g., *A. acuta*, Plate 2) there is no curled leaf, but a signal line runs to the spider, which rests on the substrate (e.g., tree trunk). In others (e.g., *A. tuonabo*), webs are built far from any substrate, and the spider rests at the hub (head downward) except when it has an egg-sac; in this case the orb is smaller and



Figures 1-10. *Alpaيدا* morphology. 1-3, female carapace and chelicerae. 4-6, male. 1, 4, lateral. 2, 5, dorsal. 3, 6, frontal. 6, with left palpus. 7-9, female epigynum. 7, ventral. 8, posterior. 9, posterior, cleared. 10, left male palpus, expanded. Figs. 1-6, *A. leucogramma*. 7, 8, diagrammatic. 9, *A. bicornuta*. 10, *A. grayi*.

Scale lines. 1.0 mm, except Figs. 9, 10, 0.1 mm.

Abbreviations. A, terminal apophysis; C, conductor; E, embolus; H, basal hematodocha; M, median apophysis; P, paracymbium; R, radix; Y, cymbium; PM, paramedian apophysis.

has fewer radii and spiral loops, and a line runs from the hub to the sac (usually a leaf) where the spider sits. In contrast to the previous species, *A. leucogramma* make webs close to the ground (hub usually less than 20 cm from the ground) and the spider rests facing downward at the hub and falls to the ground readily when disturbed. Habitats range from deep forest

to open lawns. Some species (e.g., *A. tuonabo*) readily replace webs immediately after rains, others (e.g., *A. truncata*) do so much less readily."

More information is provided under the species description of more common species (*bicornuta*, *carminea*, *quadrilorata*, *truncata*, *tuonabo* and *veniliae*). *A. quadrilorata* seems limited to one species



Map 1. The number of species of *Alpaida* in different areas.

of plant and when disturbed drops into a water puddle at the base of the leaf (J. Kochalka, letter).

A specimen of *A. alvarengai* has the right fourth leg regenerated. (Regeneration is uncommon in the family.)

The median lobe of the epigynum of a number of species readily breaks off, probably preventing a second mating.

Shelly (1983) observed webs and prey selection of *Alpaida tuonabo* and most appears known about this species. Some of Shelly's observations are summarized below with *A. tuonabo*. There is some indication that the niche of *Alpaida* is much narrower than of other orb weavers. For instance, *A. quadrilorata* has been collected from the thistle-like umbellifer *Eryngium horridum*. Are adults always found on this plant? *Alpaida graphica* is associated with small sink-holes in the Yucatan peninsula. Do others have similar restricted habitats?

Alpaida species are limited to the Neotropics. Only one species (*A. septemmacmata*) has been found north of the Isthmus of Tehuantepec; 13 species occur in Central America. While eight species have been found on Trinidad, larger islands of the Lesser Antilles have one species each and

Alpaida is absent from the Greater Antilles. About 28 species have been found on the western slope of the Andes, and about 46 are found in the Amazon and Orinoco drainage area; the largest number, about 74, are found in eastern South America (Map 1).

ALPAIDA

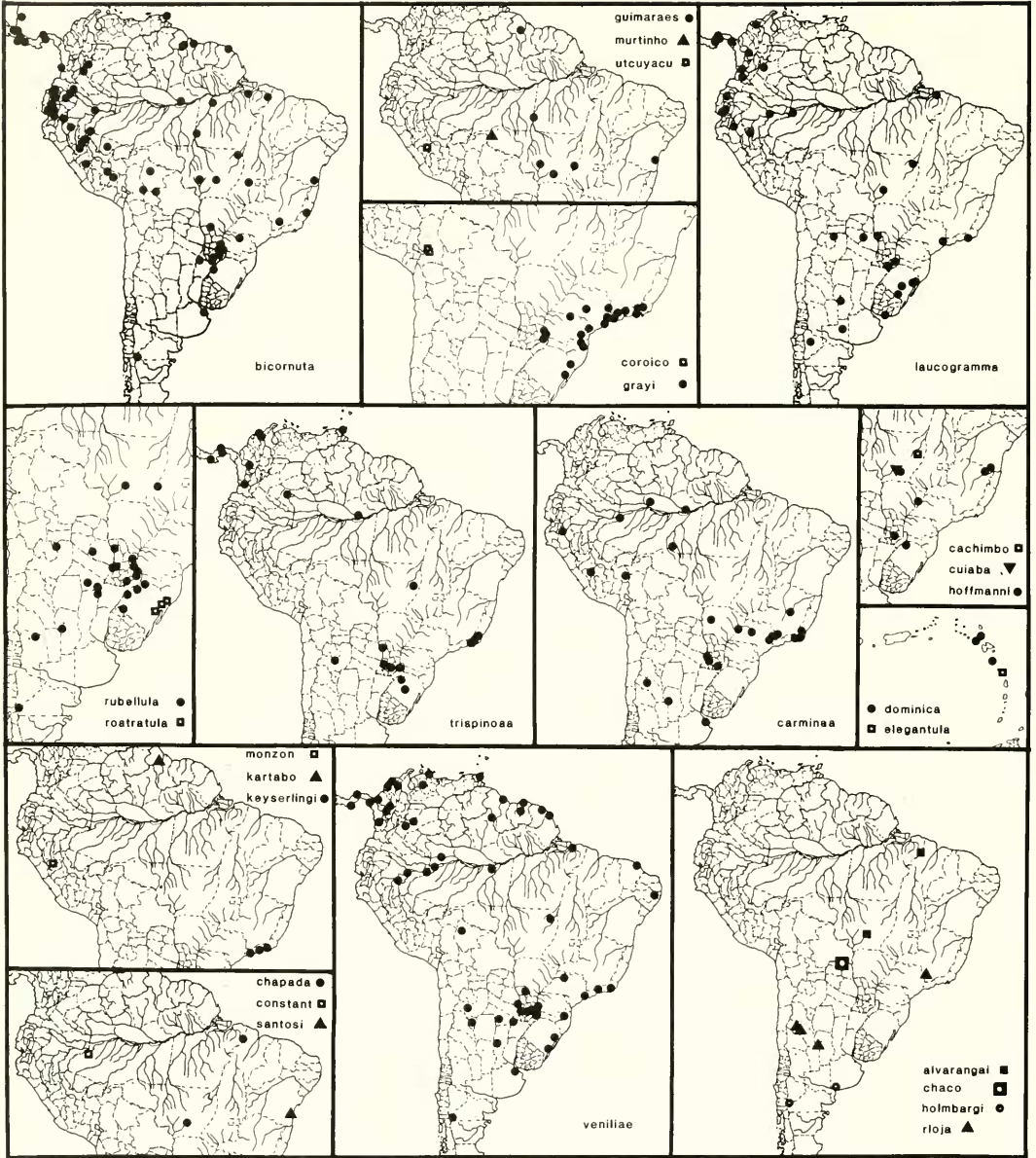
KEY TO FEMALES

(Terms used in this key are illustrated by Figs. 7 and 8.)

- 1. Abdomen with spines or pointed tubercles (Figs. 13, 65, 269, 276, 637) 2
- Abdomen without spines, sometimes with blunt tubercles (Figs. 206, 326, 488, 493) 14
- 2(1). Abdomen with anterior median spine (Figs. 65, 71, 82, 212) 3
- Abdomen without anterior median spine (Figs. 13, 15, 276, 630) 7
- 3(2). Abdomen with 5 spines (Fig. 82); Guyana (Map 2). *kartabo*
- Abdomen with 1 or 3 spines (Figs. 65, 212) 4
- 4(3). Anterior median spine much larger than laterals (Fig. 212) (laterals may be absent), abdomen without dorsal longitudinal markings (Figs. 212, 213); lower Amazon area (Map 3) *manicata*
- Three spines subequal, abdomen with dorsal longitudinal bands or markings (Figs. 65, 71, 77) 5
- 5(4). Median spine anterior to laterals (Fig. 65); median lobe of epigynum framed by lateral lobes (Fig. 63); widespread Panama to Argentina (Map 2) *trispinosa*
- All 3 spines in a row (Figs. 71, 77); epigynum otherwise (Figs. 69, 75) 6
- 6(5). Median lobe of epigynum pointed (Fig. 69); posterior median plate without dorsal lobes (Fig. 70); abdomen with bands (Fig. 71); southeastern Brazil (Map 2) *keyserlingi*
- Median lobe of epigynum rounded (Fig. 75); posterior median plate with lateral dorsal lobe (Fig. 76); abdomen with indistinct dorsal bands (Fig. 77); Peru (Map 2) *monzon*
- 7(2). Abdomen oval, pointed posteriorly with a pair of shoulder spines (Figs. 13, 263, 276) 8
- Abdomen with lateral humps and minute pair or pairs of spines on humps (Figs. 630, 637, 642) 12
- 8(7). Epigynum longer than wide in sub-

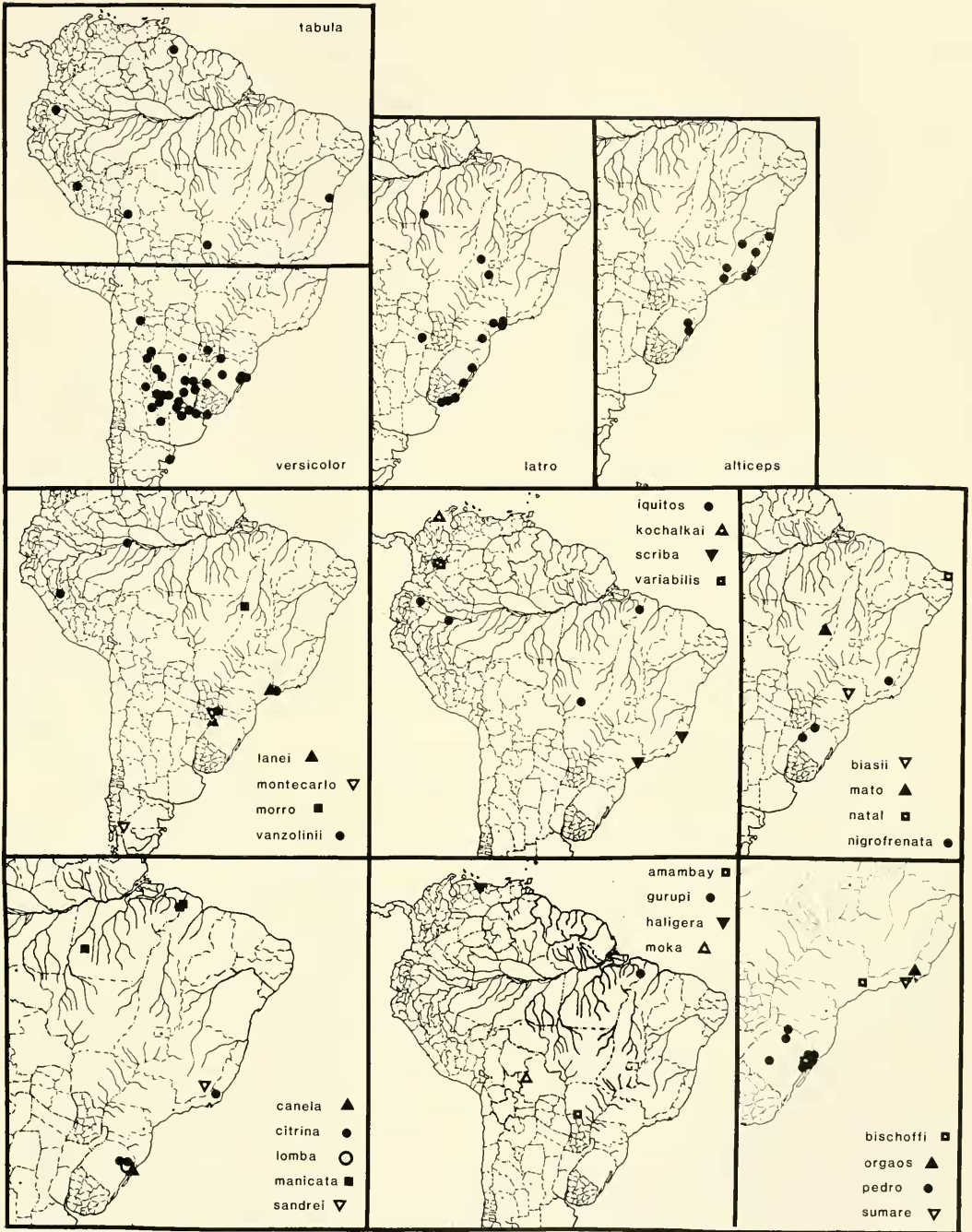


Plate 2. *Alpaida* web diversity. Webs of adult females. Top, *A. truncata*, maximum diameter of sticky spiral 18.7 cm. Middle, *A. moata*, maximum vertical diameter of sticky spiral 17.1 cm. Bottom left, *A. championi*, max. diameter of sticky spiral 18.2 cm. Right, *A. acuta*, center to bottom spiral 9 cm. (All photographs W. Eberhard.)

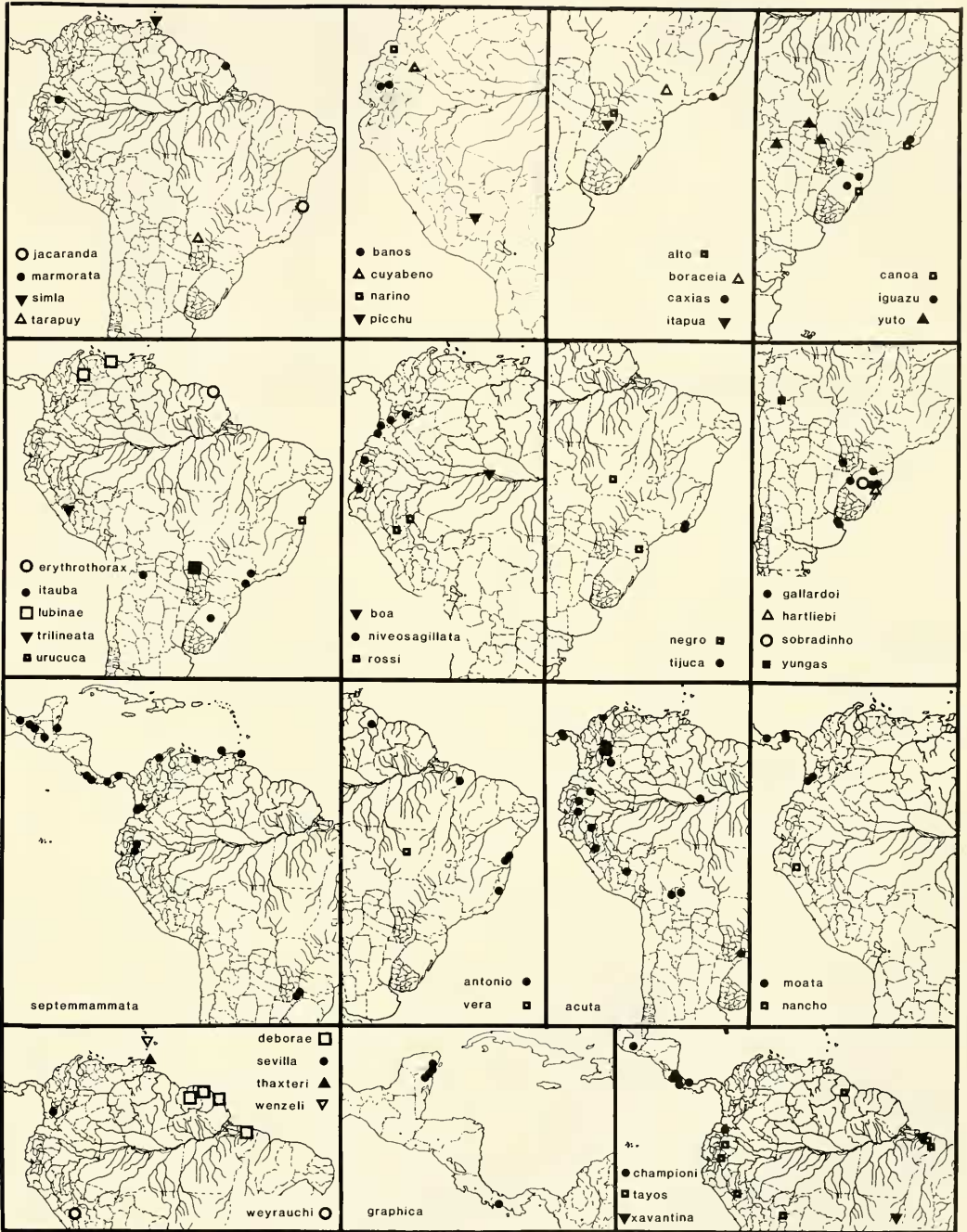


Map 2. Distribution of *Alpaída* species.

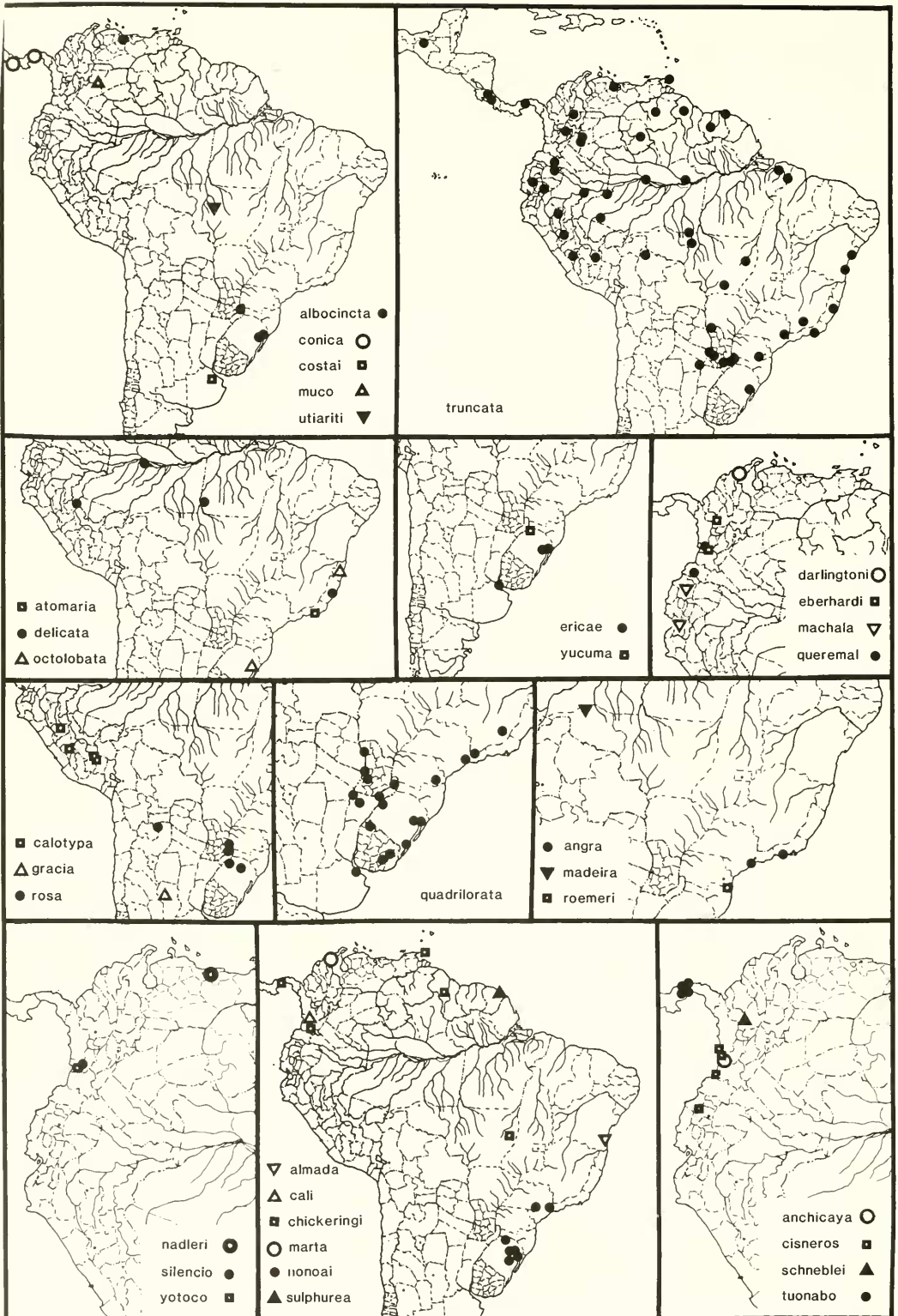
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| <p>ventral and posterior view (Figs. 261, 262); central Ecuador (Map 4) <i>banos</i></p> <p>- Epigynum wider than long (Figs. 11, 12, 271, 272) 9</p> <p>9(8). Epigynum in ventral view with larger triangular lobe and median longitudinal light band (Fig. 11); poste-</p> | <p>rior median plate oval without lobes (Fig. 12); widespread, Central America to central Argentina (Map 2). <i>bicornuta</i></p> <p>- Epigynum otherwise (Figs. 267, 271, 274) 10</p> <p>10(9). Epigynum with a large triangular</p> |
|--|---|

Map 3. Distribution of *Alpaida* species.

	notch, tip of notch in line with posterior edge (Fig. 271); southwestern Colombia (Map 4) <i>narino</i>		
-	Epigynum otherwise (Figs. 267, 274) 11	20(19).	Tip of scape rounded (Fig. 593); abdomen elongate (Fig. 595); Panama (Map 5) <i>tuonabo</i>
11(10).	Abdomen constricted posterior to its lateral spines (Fig. 276); Mato Grosso, Brazil (Map 3) <i>amambay</i>	-	Tip of scape pointed (Figs. 587, 599); abdomen oval (Figs. 589, 601) 21
-	Abdomen not so constricted, spines dorsal (Fig. 269); northeastern Ecuador (Map 4) <i>cuyabeno</i>	21(20).	Epigynum with a pair of dark patches in posterior view (Fig. 600); western Colombia to Ecuador (Map 5). <i>cisneros</i>
12(7).	Epigynum with a transverse lip (Fig. 640), epigynum wider than long in posterior view (Fig. 641); French Guiana (Map 5) <i>sulphurea</i>	-	Epigynum with a pair of indistinct dorsal notches in posterior view (Fig. 588); southwestern Colombia (Map 5) <i>anchicaya</i>
-	Epigynum otherwise and as long as wide (Figs. 628, 635) 13	22(19).	Dorsum of abdomen with paired black patches (Fig. 106); posterior median plate convex with parallel sides (Fig. 105); widespread Central America to Argentina (Map 2) <i>veniliae</i>
13(12).	Posterior median plate constricted in middle (Fig. 629); Panama, southern Colombia to Guyana (Map 5) <i>chickeringi</i>	-	Abdomen marked otherwise; posterior median plate otherwise 23
-	Posterior median plate oval (Fig. 636); southwestern Colombia (Map 5) <i>almada</i>	23(22).	Posterior median plate round (Fig. 606); southwestern Colombia (Map 5) <i>silencio</i>
14(1).	Epigynum square, or longer than wide in subventral view (Figs. 103, 122, 154, 515, 541) and square to longer than wide in posterior view (Figs. 105, 123, 155, 516, 542) 15	-	Posterior median plate otherwise 24
-	Epigynum wider than long in ventral or posterior view (Figs. 19, 20, 253, 254) 28	24(23).	Median lobe triangular, with sides of epigynum rounded (Fig. 122); posterior median plate (Fig. 123); Amazon area to Argentina (Map 2) <i>carminea</i>
15(14).	Transverse notch anterior to the posterior edge of the epigynum (Fig. 446); epigynum triangular in posterior view (Fig. 447); Guatemala to southwestern Colombia (Map 4) <i>championi</i>	-	Epigynum otherwise 25
-	Epigynum otherwise 16	25(24).	Posterior edge of epigynum on each side of lobe concave (Fig. 154); posterior median plate tripartite (Fig. 155); abdomen oval (Fig. 156); Bolivia to southern Brazil and Argentina (Map 3) <i>versicolor</i>
16(15).	Epigynum with an anterior edge (Fig. 555); Colombia (Map 5) <i>eberhardi</i>	-	Posterior edge otherwise (Figs. 191, 194, 198); posterior median plate otherwise (Figs. 192, 195); abdomen elongate (Fig. 197) or widest posteriorly (Figs. 193, 200) 26
-	Epigynum without distinct anterior edge 17	26(25).	Posterior median plate narrowing dorsally (Fig. 192); northern Colombia (Map 3) <i>kochalkai</i>
17(16).	Epigynum with a scape slightly constricted proximally (Fig. 541); northern Colombia (Map 5) <i>darlingtoni</i>	-	Posterior median plate otherwise (Figs. 195, 199) 27
-	Epigynum otherwise 18	27(26).	Epigynum in posterior view about as wide as long (Fig. 199); central Colombia (Map 3) <i>variabilis</i>
18(17).	Epigynum with heartshaped posterior median plate (Fig. 516); abdomen with small anterior median hump and narrow posterior point (Fig. 517); Buenos Aires Prov., Argentina (Map 5) <i>costai</i>	-	Epigynum in posterior view longer than wide (Fig. 195); Amazon drainage (Map 3) <i>iquitos</i>
-	Epigynum otherwise; abdomen oval, without anterior median hump (Figs. 124, 595) 19	28(14).	Posterior margin of median notch anterior to posterior edge of epigynum (Figs. 44, 376, 381, 392) 29
19(18).	Scape (or median lobe) larger than base of epigynum (Figs. 587, 593, 599) 20	-	Epigynum without notch, or if with



Map 4. Distribution of *Alpaيدا* species.



Map 5. Distribution of *Alpaida* species.

- median notch, its posterior margin is in line with margin of epigynum or posterior to it (Figs. 110, 147) 44
- 29(28). Abdomen all black with a pair of sclerotized tubercles (Fig. 437); Yucatan Peninsula to Panama (Map 4) *graphica*
- Abdomen otherwise 30
- 30(29). Epigynum without median lobe (Fig. 172); posterior median plate as in Figure 173 and abdomen narrow (Fig. 174); Misiones Prov., Argentina (Map 3) *montecarlo*
- If abdomen narrow, epigynum otherwise 31
- 31(30). Abdomen with median white longitudinal band, or white dorsally (Figs. 46, 88, 130, 463) 32
- Abdomen marked otherwise (Figs. 442, 454) 39
- 32(31). Notch the distance of its width or more from posterior margin (Figs. 44, 460, 468) 33
- Notch closer to posterior margin (Figs. 57, 86, 128, 166) 36
- 33(32). Epigynum triangular in posterior view (Fig. 447); venter of abdomen black (Fig. 449); Guatemala to Panama (Map 4) *championi*
- Epigynum otherwise; venter not all black 34
- 34(33). Epigynum rectangular (Figs. 458, 460); Amazon area (Map 4) *tayos*
- Outline of epigynum a semicircle or oval (Figs. 44, 468) 35
- 35(34). Median lobe longer than wide, with posterior edge notched on each side of lobe (Fig. 44); southeastern Brazil, Misiones Prov., Argentina (Map 2) *grayi*
- Median lobe as wide as long (Fig. 468); northern Peru (Map 4) *nancho*
- 36(32). Abdomen posteriorly constricted (Fig. 88); posterior median plate narrow ventrally (Fig. 87); Mato Grosso, Brazil (Map 2) *cutaba*
- Abdomen and posterior median plate otherwise 37
- 37(36). Posterior median plate almost rectangular with narrow lip framing plate (Fig. 129); lower Amazon to Mato Grosso (Map 2) *alvarengai*
- Posterior median plate otherwise (Figs. 58, 167) 38
- 38(37). Notch of epigynum wider than long (Fig. 57); posterior median plate almost triangular (Fig. 58); southern Brazil to Argentina (Map 2) *rubellula*
- Notch of epigynum as wide as long (Fig. 166); posterior median plate wider ventrally than dorsally (Fig. 167); Goiás, Brazil (Map 3) *morro*
- 39(31). Notch of epigynum much wider than long (Fig. 381); central Peru (Map 4) *trilineata*
- Notch of epigynum about as wide as long (Figs. 376, 386) 40
- 40(39). Notch its width or less from posterior edge (Figs. 392, 440) 41
- Notch more than its width from posterior edge (Figs. 376, 386, 452) 42
- 41(40). In posterior view, lip widest ventrally (Fig. 441); Bahia, Brazil (Map 4) *urucuca*
- In posterior view, lip as wide dorsally as ventrally (Fig. 393); Guyana to eastern Brazil (Map 4) *antonio*
- 42(40). Posterior median plate semicircular with 3 dorsal notches (Fig. 453); eastern Amazon area (Map 4) *xavantina*
- Posterior median plate otherwise (Figs. 377, 387) 43
- 43(42). Sides of epigynum strongly curved (Fig. 386); Bolivia to southern Brazil (Map 4) *itauba*
- Sides of epigynum less curved (Fig. 376); French Guiana (Map 4) *erythrothorax*
- 44(28). Abdomen truncate posteriorly with 4 posterior humps, each covered by a black patch (Fig. 574); widespread from southern Mexico to northern Argentina (Map 5) *truncata*
- Abdomen otherwise 45
- 45(44). Epigynum without notch or lip (Figs. 19, 50, 579) 46
- Epigynum with lip, notch or median groove (Figs. 110, 519, 530, 537) 54
- 46(45). Abdomen with 3 lateral lobes (Fig. 485); posterior median plate almost square (Fig. 484); southeastern Brazil (Map 5) *octolobata*
- Abdomen, posterior plate otherwise 47
- 47(46). Epigynum with median anterior edge (Figs. 555, 564) 48
- Epigynum without median anterior edge (Figs. 19, 559, 579) 49
- 48(47). In posterior view, lips with ventral arms (Fig. 555); Colombia (Map 5) *eberhardi*
- In posterior view, lips extend ventrally and laterally (Fig. 565); southwestern Colombia (Map 5) *queremal*
- 49(47). Epigynum with anterior stalk (Figs. 559, 561); western Ecuador (Map 5) *machala*
- Epigynum otherwise 50
- 50(49). Epigynum with a lobe on each side (Figs. 19, 20); Guyana to Mato Gros-

	so and Bahia, Brazil (Map 2)	61(59).	Lips of epigynum folded and projecting anteriorly (Figs. 280-283, 285); Amazon area (Map 4)	<i>marmorata</i>
-	Epigynum otherwise	-	Lips otherwise	62
51(50).	Epigynum triangular (Figs. 551, 552); southern Brazil (Map 5)	62(61).	Lips with anterior margin transverse (Figs. 140, 294, 360, 367)	63
-	Epigynum otherwise	-	Lips otherwise	67
52(51).	Posterior median plate hardly wider than lips on each side (Fig. 580); southwestern Colombia (Map 5)	63(62).	Abdomen black with median ventral white patch (Figs. 423, 424); epigynum as in Figures 421, 422; Panama to northern Argentina (Map 4)	<i>acuta</i>
-	Posterior median plate much wider than lips (Figs. 53, 584)	-	Abdomen and epigynum otherwise	64
53(52).	Abdomen with a median anterior hump (Fig. 54); epigynum with a pointed scape (Fig. 50); posterior median plate oval (Fig. 53); southern Brazil (Map 2)	64(63).	Abdomen banded (Fig. 142); epigynum as in Figures 140, 141; northern Paraguay (Map 2)	<i>chaco</i>
-	Abdomen without anterior hump (Fig. 585); epigynum with rounded lobe (Fig. 583); posterior median plate divided by lips dorsally into 2 lobes (Fig. 584); Venezuela (Map 5)	-	Abdomen and epigynum otherwise	65
	..... <i>nodleri</i>	65(64).	Median lobe set off, with parallel sides (Fig. 367); Venezuela (Map 4)	<i>lubinae</i>
54(45).	Lobe of epigynum pointed, with a slight proximal constriction (Fig. 300); southern Brazil, northern Argentina (Map 4)	-	Median lobe triangular	66
-	Lobe never with constriction	66(65).	Only median lobe triangular (Fig. 294); southeastern Brazil (Map 4)	<i>hartliebi</i>
55(54).	Posterior median plate longer than wide (Figs. 26, 199, 365, 473)	-	Median lobe and lips forming a triangle (Fig. 360); Peru (Map 4)	<i>weyrauchi</i>
-	Posterior median plate wider than long	67(62).	Median lobe rounded and slightly constricted at base (Fig. 404); Amazonian Peru (Map 4)	<i>rossi</i>
	..... <i>utcuayacu</i>	-	Median lobe otherwise	68
56(55).	Lips with lobe on each side in posterior view (Fig. 26); abdomen with bands (Fig. 27); Peruvian Amazon drainage (Map 2)	68(67).	Abdomen barely longer than wide, with humps as in Figures 481, 482; epigynum as in Figure 479; Rio de Janeiro, Brazil (Map 5)	<i>atomaria</i>
-	Lips without lobes	-	Abdomen and epigynum otherwise	69
57(56).	Sides of median plate convex (Fig. 473); epigynum as Figure 472; Amazon area to eastern Brazil (Map 5)	69(68).	Posterior end of abdomen truncate with side of posterior end parallel and slightly constricted at base (Figs. 549, 550); western Brazil (Map 5)	<i>madeira</i>
-	Sides of median plate parallel (Figs. 199, 365)	-	Abdomen otherwise	70
58(57).	Epigynum with lip recurved, the middle of lip most anterior (Fig. 364); Guianas, lower Amazon (Map 4)	70(69).	Abdomen with white semicircular marks around side enclosing dark mark (Figs. 177, 179); epigynum as in Figure 175; central to southeastern Brazil, Paraguay (Map 3)	<i>latro</i>
-	..... <i>deborae</i>	-	Abdomen and epigynum otherwise	71
-	Epigynum with lip procurved (Fig. 198); west central Colombia (Map 3)	71(70).	Abdomen oval, contrastingly marked with bands or paired patches as in Figures 532, 533, 539; epigynum with anterior edge of lip indistinct (Figs. 530, 537)	72
59(55).	Posterior median plate partially divided in middle by swollen lip (Figs. 331, 337)	-	Abdomen or epigynum otherwise	73
-	Posterior median plate not so divided	72(71).	Abdomen with black median band (Fig. 539); southeastern Brazil (Map 5)	<i>angra</i>
	..... <i>variabilis</i>	-	Abdomen always with white to orange median band (Figs. 532, 533); southeastern Brazil, Paraguay to northern Argentina (Map 5)	<i>quadrilatorata</i>
60(59).	Median swellings of lips (in posterior view) much longer than wide (Fig. 331); southern Brazil, Misiones Prov., Argentina (Map 4)	73(71).	Abdomen subspherical, light, or dark with light marks (Figs. 230, 233)	74
-	Median swellings of lips barely longer than wide (Fig. 337); southeastern Brazil (Map 4)	-	Abdomen otherwise	75
	..... <i>tijuca</i>			

- 74(73). Abdomen dark with light marks (Fig. 233); epigynum as in Figure 231; southeastern Brazil (Map 3) *biasi*
- Abdomen light colored (Fig. 230); epigynum with dark line on lip (Fig. 228); Mato Grosso, Brazil (Map 3) *mato*
- 75(73). Abdomen distinctly marked as in Figure 41; Bolivia (Map 2) *coroico*
- Abdomen otherwise 76
- 76(75). Abdomen with 3 light bands on dorsum (Figs. 35, 99, 136) 77
- Abdomen otherwise 79
- 77(76). Epigynum semicircular on each side of median lobe (Fig. 32); widespread, Panama to Argentina (Map 2) *leucogramma*
- Epigynum otherwise 78
- 78(77). Epigynum with median lobe set off (Fig. 97); Mato Grosso to lower Amazon, Brazil (Map 2) *chapada*
- Epigynum with median lobe forming a triangle with lips, not set off (Fig. 134); Argentina (Map 2) *holmbergi*
- 79(76). Abdomen shield-shaped with paired patches (Fig. 112); venter with triangular light spot (Fig. 113); epigynum as in Figures 110, 111; widespread, Amazon area to eastern Brazil (Map 3) *tabula*
- Abdomen and epigynum otherwise 80
- 80(79). Abdomen with grooves on sides (Fig. 527); epigynum with posterior median plate swollen on each side (Fig. 526); Venezuela, southern Brazil (Map 5) *albicincta*
- Abdomen or epigynum otherwise 81
- 81(80). Abdomen black oval with white lines (Figs. 521, 522); epigynum hexagonal, with sides almost parallel (Fig. 519); eastern Colombia (Map 5) *muco*
- Abdomen and epigynum otherwise 82
- 82(81). Abdomen with 6 round patches (Fig. 221); southeastern Brazil (Map 3) *lomba*
- Abdomen marked otherwise 83
- 83(82). Abdomen subspherical, dark with white shoulder marks and venter light (Figs. 118, 119); anterior edge of lip concave (Fig. 116); southeastern Brazil, northern Argentina (Map 2) *rioja*
- Abdomen and epigynum otherwise 84
- 84(83). Abdomen with 3 anterior tubercles and scalloped dorsal markings (Fig. 94) and epigynum as in Figure 92, median plate with 2 dark marks dorsally (Fig. 93); southeastern Brazil, Paraguay (Map 2) *hoffmanni*
- Abdomen and epigynum otherwise 85
- 85(84). Posterior plate with a median dorso-ventral raised plate with parallel sides (Fig. 144); Lesser Antilles (Map 2) *elegantula*
- Posterior median plate otherwise 86
- 86(85). Abdomen with a "tail" beyond spinnerets (Figs. 508, 509, 514) 87
- Abdomen without tail, rounded or pointed behind 88
- 87(86). Median lobe of epigynum almost in line with sides (Fig. 506); posterior median plate oval (Fig. 507); Panama (Map 5) *conica*
- Median lobe extending posteriorly beyond sides (Fig. 512); posterior plate with 2 lobes (Fig. 513); northern Argentina (Map 5) *gracia*
- 88(86). Abdomen with paired black marks, hairy humps on sides and posterior hairy hump (Figs. 184, 185); epigynum with polished V-shaped lip (Fig. 182); southeastern Brazil (Map 3) *alticeps*
- Abdomen otherwise 89
- 89(88). Abdomen more than twice as long as wide (Figs. 151, 162, 190, 613, 625) 90
- Abdomen oval, shorter 93
- 90(89). Median lobe semicircular, lips indistinct (Figs. 160, 161); Peruvian Amazon area to southeastern Brazil, Misiones Prov., Argentina (Map 2) *vanzolinii*
- Epigynum otherwise 91
- 91(90). Epigynum with semicircular notch (Fig. 611); abdomen with black spots (Figs. 613, 614); southern Colombia (Map 5) *cali*
- Epigynum and abdomen otherwise 92
- 92(91). Lips of epigynum polished, V-shaped (Fig. 188); posterior median plate oval (Fig. 189); Espírito Santo, Brazil (Map 3) *scriba*
- Notch on end of median lobe (Fig. 623); posterior median plate with 2 lobes (Fig. 624); northern Colombia (Map 5) *marta*
- 93(89). Abdomen only slightly longer than wide, shield-shaped, with white pigment all around sides (Fig. 218); epigynum as in Figures 216, 217; southeastern Brazil (Map 3) *canela*
- Abdomen and epigynum otherwise 94
- 94(93). Abdomen with humps all around dorsally (Figs. 429, 488, 489, 493) 95
- Abdomen usually entire, sometimes with an anterior tubercle and sometimes pointed behind 97
- 95(94). Abdomen mostly black and gray with 2 ventral white spots (Figs. 429, 431); southern Mexico, Colombia, Venezuela, northern Argentina (Map 4) *septemmammata*

-	Abdomen light colored	96	105(104).	Median lobe with a groove (Figs. 223, 224, 234, 235)	106
96(95).	Median lobe of epigynum pointed and larger than sides (Fig. 486); south-eastern Brazil, northern Argentina (Map 5)		-	Median lobe with a V- or U-shaped notch, or without a notch or groove (Figs. 147, 204, 207, 501)	107
-	Median lobe rounded and small (Fig. 491); southeastern Brazil (Map 5)		106(105).	Lips entire with a dark anterior border (Fig. 223); abdomen with grooves on sides (Fig. 225); southeastern Brazil (Map 3)	<i>nigrofrenata</i>
97(94).	Abdomen with cardiac area black, in contrast to adjacent light orange shoulder areas (Fig. 308); epigynum as in Figures 306, 307; southeastern Brazil (Map 4)		-	Lips with anterior margin broken (Fig. 234); abdomen without grooves on sides (Fig. 236); São Paulo, Brazil (Map 3)	<i>bischoffi</i>
-	Abdomen of various coloration but cardiac area usually with white pigment spots; epigynum otherwise	98	107(105).	Posterior median plate visible as a bulge on each side of median lobe; lobe with a deep notch (Fig. 501); Peru (Map 5)	<i>calotypa</i>
98(97).	Abdomen with median dorsal white band, sometimes broken, with patches of black and white on sides (Figs. 241, 245, 249, 255, 497, 619)		-	Posterior median plate barely visible in ventral view (Figs. 147, 204, 207)	108
-	Abdomen mostly light (Figs. 151, 206, 209, 225, 236, 503) or abdomen mostly black and gray with a white cardiac mark (Figs. 259, 315, 417, 442)	99	108(107).	Abdomen with an anterior median tubercle (Figs. 206, 209)	109
99(98).	Posterior median plate visible in ventral view of epigynum, surrounded by a lip on each side of the median lobe (Figs. 495, 617)	100	-	Abdomen without such a tubercle (Fig. 151); Lesser Antilles (Map 2)	<i>dominica</i>
-	Posterior median plate barely visible in ventral view (Figs. 239, 243)	101	109(108).	Median lobe pointed (Fig. 207); dorsally posterior median plate with 2 sclerotized teeth (Fig. 208); south-eastern Brazil (Map 3)	<i>sandrei</i>
100(99).	Median lobe V-shaped (Fig. 617); southeastern Brazil (Map 5)		-	Median lobe rounded (Fig. 204); posterior median plate with 2 slightly sclerotized bulges dorsally facing median (Fig. 205); southeastern Brazil (Map 3)	<i>citrina</i>
-	Median lobe U-shaped with parallel sides (Fig. 495); southeastern Brazil to Bolivia (Map 5)		110(104).	Median lobe of epigynum a pointed triangle, not bordered toward posterior median plate (Figs. 257, 342)	111
101(99).	Posterior median plate with 2 dorsal notches (Fig. 240); Rio de Janeiro, Brazil (Map 3)		-	Median lobe always discrete (Figs. 348, 398)	112
-	Posterior median plate entire (Fig. 244, 247, 254)	102	111(110).	Posterior median plate rectangular (Fig. 258); Venezuela (Map 3)	<i>haligera</i>
102(101).	Median lobe with notch (Figs. 246, 248); posterior median plate with 2 dorsal dark marks (Fig. 247); south-eastern Brazil (Map 3)		-	Posterior median plate oval (Fig. 343); St. Vincent Island, Lesser Antilles (Map 4)	<i>wenzeli</i>
-	Notch more anterior (Figs. 243, 253); posterior median plate without dark marks (Figs. 244, 254)	103	112(110).	Length of posterior median plate visible on each side of median lobe equal or greater than thickness of lips (Figs. 348, 398)	113
103(102).	Median lobe a minute tubercle (Fig. 253); posterior median plate subtriangular (Fig. 254); Bolivia (Map 3)		-	Posterior median plate barely visible on each side of median lobe (Figs. 354, 440)	115
-	Median lobe rounded large (Fig. 243); posterior median plate oval (Fig. 244); Rio de Janeiro, Brazil (Map 3)		113(112).	Median lobe V-shaped (Figs. 317, 348)	114
104(98).	Abdomen mostly light (Figs. 151, 206, 209, 225, 236, 503)	105	-	Median lobe U-shaped with parallel sides and thin lips (Fig. 398); Colombia, Ecuador (Map 4)	<i>niveosagillata</i>
-	Abdomen mostly black and gray with a white cardiac mark (Figs. 259, 315, 417, 442)	110	114(113).	Lips thick (Fig. 348); posterior median plate angular (Fig. 349); southeastern Brazil (Map 4)	<i>canoaa</i>

- Lips otherwise (Fig. 317); posterior median plate three-partite, ends rounded (Fig. 318); southern Colombia (Map 4) *sevilla*
- 115(112). Width of median lobe wider than areas on each side (Fig. 289); Trinidad (Map 4) *simla*
- Width of median lobe narrower than area on each side. 116
- 116(115). Width of median lobe much greater than thickness of indistinct lips on each side (Figs. 410, 415) 117
- Width of median lobe equal or narrower than thickest part of lips (Figs. 324, 354, 440) 118
- 117(116). Posterior median plate with a transverse groove (Fig. 411); Mato Grosso, southeastern Brazil (Map 4) *negro*
- Posterior median plate with dorsoventral ridge (Fig. 416); Panama, Colombia (Map 4) *moata*
- 118(116). Lips with margins parallel (Figs. 310, 313, 324) 119
- Lips swollen, margins bulging (Figs. 320, 354, 427, 440) 121
- 119(118). Width of posterior median plate about 1.6 times dorsoventral length, plate constricted in middle (Fig. 314); Amazonian Peru (Map 4) *picchu*
- Width of posterior median plate about twice dorsoventral length, plate not constricted in middle (Figs. 311, 325) 120
- 120(119). Posterior median plate angular (Fig. 325); Trinidad (Map 4) *thaxteri*
- Posterior median plate rounded on sides (Fig. 311); southeastern Brazil, Bolivia (Map 4) *itapua*
- 121(118). Posterior median plate with sides straight, plate wider ventrally than dorsally (Fig. 355); Paraguay, northern Argentina (Map 4) *yuto*
- Posterior median plate otherwise (Figs. 321, 428, 441) 122
- 122(121). Lips of posterior median plates bulging on sides ventrally (Fig. 441); Bahia, Brazil (Map 4) *urucuca*
- Lips of about equal width around posterior median plate (Figs. 321, 428) 123
- 123(122). Dorsal border of posterior median plate overhung by a pair of tubercles (Fig. 428); venter of abdomen with a pair of white patches (Fig. 431); southern Mexico, Venezuela, Colombia, northern Argentina (Map 4) *septemmammata*
- Dorsal border of posterior median plate bordered by slightly swollen lips (Fig. 321); venter of abdomen with a pair of white lines (Fig. 323); Paraguay (Map 4) *alto*

KEY TO MALES

Terms used in the key are illustrated by Figures 6 and 10. Descriptions of palpus are all of the left palpus in mesal view with the cymbium at the left, as are all illustrations.

1. Palpal tibia as long as cymbium or longer (Fig. 477); first coxa without hook, second femur without groove; Amazon area to southeastern Brazil (Map 5) *delicata*
- Palpal tibia much shorter than cymbium (Figs. 18, 30, 43); first coxa always with hook and second femur with groove (Fig. 6) 2
- 2(1). Palpal patella with 2 equal-sized, long setae 3
- Palpal patella with only 1 long seta (Fig. 6) 5
- 3(2). Median apophysis long, wider distally than proximally, tegulum with a tubercle at edge, terminal apophysis rectangular (Fig. 252); southeastern Brazil (Map 3) *pedro*
- Median apophysis not long and not noticeably wider distally; tegulum entire, terminal apophysis distally bent lobe (Figs. 634, 639) 4
- 4(3). Terminal apophysis with tip of distal lobe projecting away from tegulum (Fig. 634); Panama, Guianas to Colombia (Map 5) *chickeringi*
- Terminal apophysis with tip of distal lobe pointing toward tegulum (Fig. 639); Bahia, Brazil (Map 5) *almada*
- 5(2). Abdomen with 3 anterior spines (Figs. 73, 78) 6
- Abdomen with at most a median anterior tubercle 7
- 6(5). Median apophysis longer than wide; terminal apophysis a bent flat rod (Fig. 74); southeastern Brazil (Map 2) *keyserlingi*
- Median apophysis as long as wide; terminal apophysis with sides bulging (Fig. 79); northern Peru (Map 2) *monzon*
- 7(5). Median apophysis distally drawn beyond tegulum, bent around tegulum (Figs. 569, 577) or projecting (Fig. 592) 8
- Median apophysis otherwise 10
- 8(7). Second tibiae flattened (Fig. 578); abdomen with 4 posterior tubercles (Fig. 576); widespread, southern Mexico to Argentina (Map 5) *truncata*
- Second tibiae not so modified; abdomen rounded behind (Figs. 568, 591) 9
- 9(8). Embolus filiform; median apophysis projecting away from tegulum (Fig. 592); southern Colombia (Map 5) *anchucaya*
- Embolus short; median apophysis curved parallel to edge of tegulum (Fig. 569); southern Colombia (Map 5) *queremal*

10(7).	Tegulum with "shutters" under terminal apophysis (Fig. 109); widespread, Panama to Argentina (Map 2)	<i>veniliae</i>	
-	Tegulum without "shutters"		11
11(10).	Embolus or its end coiled or filamentous (Figs. 68, 91, 121, 133, 181, 546, 604)		12
-	Embolus otherwise		23
12(11).	Abdomen with light patches enclosing darker marks around edge (Fig. 180); palpus as in Figure 181; Amazon to southeastern Brazil (Map 3)	<i>latro</i>	
-	Abdomen and palpus otherwise		13
13(12).	Abdomen banded and with anterior median tubercle (Fig. 67); palpus with large thorn on median apophysis (Fig. 68); widespread, Panama to northern Argentina (Map 2)	<i>trispinosa</i>	
-	Abdomen and palpus otherwise		14
14(13).	Embolus U-shaped in ventral view (Fig. 91); Mato Grosso, Brazil (Map 2)	<i>cachimbo</i>	
-	Embolus otherwise		15
15(14).	Base of embolus visible from side of palpus, originating from underneath cymbium (Figs. 121, 133, 409)		16
-	Base of embolus originating from "top" of bulb (Figs. 546, 604, 610, 616, 622, 627)		18
16(15).	Terminal apophysis with distal lobe pointing to tip of cymbium (Fig. 133); Pará to Mato Grosso, Brazil (Map 2)	<i>alvarengai</i>	
-	Terminal apophysis otherwise (Figs. 121, 409)		17
17(16).	Terminal apophysis with distal lobe subtriangular, pointed (Fig. 121); southeastern Brazil, Argentina (Map 2)	<i>rioja</i>	
-	Terminal apophysis as in Figure 409; Amazonas, Brazil (Map 4)	<i>boa</i>	
18(15).	Embolus supported by conductor in distal half of bulb (Figs. 610, 616, 622)		19
-	Embolus tip supported by conductor in middle or basal half of bulb (Figs. 546, 604, 627)		21
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median apophysis long with tooth at proximal end (Fig. 347); Rio de Janeiro, Brazil (Map 4) *caxias*

Alpaida bicornuta (Taczanowski), new combination

Plate 1; Figures 11–18; Map 2

Epeira bicornuta Taczanowski, 1878: 168, pl. 2, fig. 18, ♀. Female lectotype here designated, and paralectotypes from Pumamarca and Amable María, Junín, Peru (PAN), examined.

Epeira spinigera O. P.-Cambridge, 1889: 43, pl. 5, figs. 9, 10, ♀. Female holotype from Bugaba, Panama (BMNH), examined. Keyserling, 1892: 131, pl. 7, fig. 97, ♀. McCook, 1894: 191, pl. 14, figs. 3, 4. NEW SYNONYMY.

Aranea spinigera:—F. P.-Cambridge, 1904: 515, pl. 49, fig. 16, ♀. Roewer, 1942: 853. Bonnet, 1955: 602.

Araneus designatus Chamberlin and Ivie, 1936: 51, pl. 14, figs. 126, 127. Immature female from Barro Colorado Island, Panama, just before final molt (AMNH), examined. Roewer, 1942: 841. Bonnet, 1955: 486. NEW SYNONYMY.

Aranea bicornuta:—Roewer, 1942: 837.

Wixia fissifasciata Mello-Leitão, 1945: 244, fig. 27, ♀. Female holotype from Pindapoy, Prov. Misiones, Argentina (MLP), examined. NEW SYNONYMY.

Lariniacantha grayi:—Archer, 1951: 15, figs. 38–40, ♀, ♂. Misidentification, not *Epeira grayi* Blackwall.

Araneus bicornuta:—Bonnet, 1955: 443.

Description. Female. Carapace, sternum orange. Legs orange with black tarsi. Dorsum of abdomen with white bands, black spot posteriorly. Carapace wide. Abdomen pointed behind with two anterolateral spines (Figs. 13, 15, 16). Total length 8.2 mm. Carapace 3.4 mm long, 2.7 wide. First femur 3.3 mm; patella and tibia 4.2; metatarsus 2.7; tarsus 1.1. Second patella and tibia 3.6 mm; third 2.2; fourth 3.7.

Male. Coloration as in female. Fourth trochanters with two macrosetae. Abdomen oval, without spines. Total length 5.7 mm. Carapace 3.0 mm long, 2.5 wide. First femur 2.9 mm; patella and tibia 3.5; metatarsus 1.9; tarsus 0.9. Second patella and tibia 2.8 mm; third 1.8; fourth 2.9.

Variation. Females are from 5.5 to 10.9 mm total length, males from 4.7 to 7.7. The living specimen photographed (Plate 1) had the carapace orange, legs gray, the abdomen with three rows of yellow patches on orange, black posterior and sides. The dorsum of the female abdomen may be

dark red and white, the carapace, in specimens from Costa Rica, bright orange. The abdomen may have longitudinal bands (Figs. 15, 16); sometimes it has a median anterior hump (Fig. 15).

Except for Figures 15 and 16, the specimens illustrated and described come from Panama (MCZ).

Diagnosis. Females differ from similar species by the presence of two spines on the abdomen (Figs. 13, 15, 16), and the roughly triangular epigynum having a median longitudinal light band (Fig. 11). The males, which lack spines on the abdomen, differ by the sclerotized two triangular areas of the terminal apophysis and by the rectangular median apophysis, which lacks lobes and projections. The tegulum has a small bent tip (Fig. 18).

Natural History and Distribution. The species has been collected from mud-dauber wasp nests in Costa Rica, Panama, Colombia, and Ecuador. It has been found in wet second growth forest in Costa Rica, forest savanna in Guyana and on tea plants in Peru. The egg-sac is flat, round, and attached to vegetation. Kochalka (in letter) writes that in Paraguay *A. bicornuta* is usually found in vegetation about 2 m off the ground. The egg-sac is bright yellow, smooth, very tightly pressed to vegetation. The female guards eggs. This species is found from Costa Rica to Argentina (Map 2). McCook (1894) cites specimens from Biscayne Bay [Florida] in the Marx collection. As with most other Marx specimens, the locality is probably in error. In the MCZ is a female marked "Florida," Banks

collection. Did it come from the Marx collection? There are no recent Florida records.

Records. COSTA RICA *Limón:* Tortugera Natl. Park (DU). *Heredia:* La Selva near Puerto Viejo (MCZ). *Puntarenas:* Corcovado Natl. Park (MCZ). PANAMA *Colón* and *Panamá:* Canal area, common (AMNH, MCZ). TRINIDAD Maracas Valley (AMNH). GUYANA Tumatumari (AMNH); Kartabo (AMNH); Canje Iku-ruwa River (AMNH). FRENCH GUIANA Cayenne (AMNH). COLOMBIA *Meta:* 5 km W, 45 km W Villavicencio (CAS, AMNH); Río Orteguz (AMNH). *Valle:* Buenaventura (CAS). *Putumayo:* Buena Vista (MCZ). ECUADOR *Esmeraldes:* 11 km SE San Lorenzo. *Napo:* Pompeya, Río Napo (MCZ); Tarapuy, Aguas Negras (MECN); Coca, Río Napo (MCZ); Puma-cocha (MECN); Río Tarapuy (MECN); Shushufindi (AMNH). *Pichincha:* km 113, Via Puerto Quito (MECN); 47 km S Santo Domingo (MCZ). *Los Ríos:* Juan Montalvo (AMNH); San Carlos (MECN). *Cañar:* Yanayacu (MECN). *Bolívar:* Balzapamba (MCZ, AMNH). *Guayas:* Milagro (CAS); Guayaquil (CAS). PERU *Loreto:* Iquitos (MCZ). *Amazonas:* Río Alto Marañon between Ríos Campa and Nieva (AMNH). *Ucayalí:* Pucallpa (PAN); Boquerón, 470 m (AMNH). *Huánuco:* Tingo María (CAS, MCZ); Monzon Valley (CAS); Las Palmas (CAS); Cord. Azul, 1,400 m (AMNH); Divisoria, 1,700 m (AMNH). *Junín:* Utcuyacu, 1,600–2,200 m (AMNH); Pumamarca, 1,900 m (PAN). *Cuzco:* Chanchosmayo Vall. (AMNH); Ocongale (AMNH). BRA-

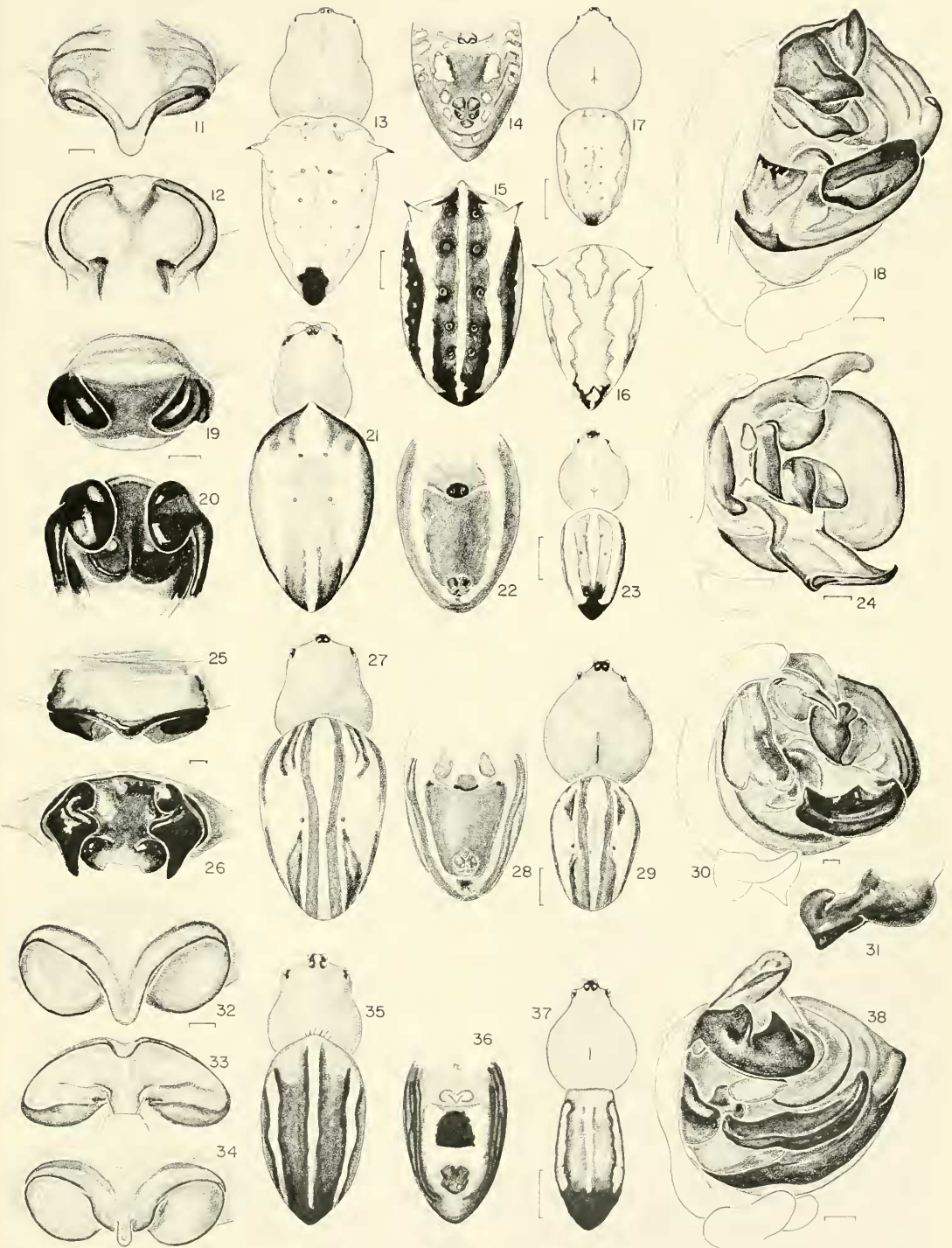
Figures 11–18. *Alpaida bicornuta* (Taczanowski). 11–16, female. 11, epigynum, ventral. 12, epigynum, posterior. 13, dorsal. 14–18, abdomen, ventral. 15, 16, abdomen, dorsal. 17, 18, male. 17, dorsal. 18, left palpus. 13, 14 (Panama). 15, (Peru). 16, (Ecuador).

Figures 19–24. *A. guimaraes* n. sp. 19–22, female. 19, epigynum, ventral. 20, epigynum, posterior. 21, dorsal. 22, ventral. 23, 24, male. 23, dorsal. 24, palpus.

Figures 25–31. *A. utcuyacu* n. sp. 25–28, female. 25, epigynum, ventral. 26, epigynum, posterior. 27, dorsal. 28, ventral. 29–31, male. 29, dorsal. 30, palpus. 31, paracymbium, lateral.

Figures 32–38. *A. leucogramma* (White). 32–36, female. 32, 34, epigynum, ventral. 33, epigynum, posterior. 35, dorsal. 36, ventral. 37, 38, male. 37, dorsal. 38, palpus.

Scale lines. 1.0 mm, genitalia, 0.1 mm.



ZIL *Amazonas*: Manaus (NHRM). *Pará*: Jacareacanga (AMNH); Canindé (AMNH); Fordlândia (AMNH). *Acre*: Río Embira mouth (AMNH). *Bahia*: Camacã (MCN). *Goiás*: Pirenópolis (MZSP). *Mato Grosso*: Barra do Tapirapé (MZSP, AMNH); Chapada dos Guimarães (MCN); Barra dos Bugres (MNRJ). *Minas Gerais*: Lavras (MCZ). *Espírito Santo*: (BMNH). *Paraná*: Rolândia (AMNH). *Rio Grande do Sul*: São Borja (MCN). **BOLIVIA** *El Beni*: Espíritu, Yacuma (ZSM). *Cochabamba*: Yungas de Palmar, 1,000 m (ZSM). *La Paz*: Yungas, Coroico (IRSNB). **PARAGUAY** *Alto Paraná*: Taguarazapa (AMNH); Puerto Bertoni (MCZ). *Amambay*: Bella Vista (MNHNP). *Itapúa*: Capitan Meza (MNHNP). **ARGENTINA** *Misiones*: Parque Nacional Iguazu (MEG); Montecarlo (AMNH, MEG). *Corrientes*: Paso de la Patria (MEG). *Buenos Aires*: La Plata (MLP). *Río Negro*: El Bolson area (AMNH).

Alpaida guimaraes new species

Figures 19–24; Map 2

Holotype. Female from Chapada dos Guimarães, Mato Grosso, Brazil, 1 Dec. 1983, M. Hoffmann (MCN no. 11969). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange-yellow, sides darker orange, lateral eyes on black patches. Distal tips of chelicerae black. Labium orange with a black mark; endites orange with a black mark. Sternum orange with median black mark. Coxae orange; legs orange yellow dusky to black dorsally and ventrally, sides lighter. Dorsum of abdomen white, black and gray (Fig. 21); venter black with a white band on each side meeting behind spinnerets (Fig. 22). Eyes subequal in size. Anterior median eyes 1.2 diameters apart; posterior median eyes their diameter apart. Abdomen with small anterior median hump; pointed behind (Fig. 21). Total length 7.2 mm. Carapace 2.3 mm long, 1.6 wide. First femur 1.7 mm; patella and tibia 2.3; metatarsus 1.5; tarsus 0.6. Second patella and tibia 1.9 mm; third 1.2; fourth 1.9.

Male. Carapace dusky, coxae black; otherwise coloration similar to female. Eyes subequal in size. Anterior median eyes and posterior median eyes each their diameter apart. Total length 4.1 mm. Carapace 2.0 mm long, 1.7 wide. First femur 2.2 mm; patella and tibia 2.4; metatarsus 1.8; tarsus 0.9. Second patella and tibia 2.1 mm; third 1.1; fourth 1.7.

Notes. It is not certain that the male belongs with the female. The similar coloration, especially of legs and venter of abdomen, associates males and females.

There may be a median lobe on the epigynum that has been torn off in all available specimens.

Variation. Total length of females 5.2 to 7.2 mm. The illustrations and descriptions are from the holotype.

Diagnosis. The dark framing of the female abdomen in dorsal view (Fig. 21) resembles *A. utcuayacu*, but the two lateral lobes of the epigynum (Figs. 19, 20) are larger than those of *A. utcuayacu*. The median apophysis of the male palpus projects beyond the tegulum and subtegulum of the palpus, the terminal apophysis projects in the opposite direction (Fig. 24).

Distribution. Guyana to Mato Grosso, Brazil (Map 2).

Paratypes. GUYANA Kartabo, 1922, ♀ (AMNH). BRAZIL *Pará*: Jacareacanga, Oct. 1959, ♀ (M. Alvarenga, AMNH). *Bahia*: Fazenda Almada, Uruçuca, 26 Nov. 1977, ♂ (J. S. Santos, MCN 10287). *Mato Grosso*: Chavantina, Oct. 1946, ♀ (H. Sick, MZSP 4637); Barra dos Bugres, 3♀ (A. Cerutti, MNRJ).

Alpaida utcuayacu new species

Figures 25–31; Map 2

Holotype. Female holotype and one male, one female paratypes from Utcuyacu, Junín, 1,600–2,200 m [near La Merced], Peru, March 1948 (F. Woytkowski, AMNH). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange. Chelicerae orange, distally black. Labium, endites black. Sternum orange; coxae lighter orange. Proximal half of femora

orange, distal half and distal articles black. Dorsum of abdomen with symmetrical black and white streaks (Fig. 27); venter black behind genital groove (Fig. 28). Eyes subequal in size. Anterior median eyes 1.3 diameters apart; posterior medians slightly more than their diameter apart. Abdomen elongate. Total length 7.5 mm. Carapace 3.1 mm long, 2.4 wide. First femur 2.5 mm; patella and tibia 3.2; metatarsus 2.3; tarsus 0.9. Second patella and tibia 2.8 mm; third 1.7; fourth 2.7.

Male. Coloration as in female (Fig. 29). Anterior median eyes slightly larger than others. Fourth trochanters with two short macrosetae; second tibiae slightly thicker than first with macrosetae. Abdomen oval. Total length 6.8 mm. Carapace 3.4 mm wide, 2.9 long. First femur 3.3 mm; patella and tibia 3.9; metatarsus 2.6; tarsus 0.9. Second patella and tibia 2.9 mm; third 2.1; fourth 2.9.

Diagnosis. The color pattern, the two longitudinal median bands of the abdomen (Figs. 27, 29) and the shape of the lateral lobes of the epigynum (Figs. 25, 26) separate this species from *A. guimaraes*. The male differs from *A. guimaraes* by the median apophysis with two blunt teeth and the terminal apophysis hidden behind the embolus (Fig. 30).

Paratypes. Type locality: February 1948, ♀ (AMNH); 4 April 1948, ♀ (MCZ).

Alpaida leucogramma (White),
new combination

Figures 32–38; Map 2

Epeira (*Singa*) *leucogramma* White, 1841: 474. Female holotype from near Rio de Janeiro, Brazil (C. Darwin, BMNH), examined.

Epeira albostrata Keyserling, 1865: 815, pl. 19, figs. 27, 28, ♀. Two female syntypes from N. Granada, [Spanish colony of Panama and Colombia] (BMNH), Keyserling, 1893: 258, pl. 13, fig. 193, ♀, ♂. NEW SYNONYMY.

Singa erythrothorax:—Taczanowski, 1873: 126. Male only, not female lectotype (PAN).

Araneus albostrata:—Tullgren, 1905: 34, pl. 5, fig. 11, ♀.

Aranea albostrata columbiana Strand, 1915: 110. Specimens from Popayan, Cauca, Colombia, lost. NEW SYNONYMY.

Parepeira albostrata:—Mello-Leitão, 1933: 41. Roewer, 1942: 871. Bonnet, 1958: 3433.

Singa leucogramma:—Roewer, 1942: 877.

Araneus leucogrammus:—Bonnet, 1955: 528.

Note. Keyserling overlooked White's description lacking illustrations of a specimen from Rio de Janeiro collected by Charles Darwin.

Description. Female from Panama. Carapace, sternum orange. Legs orange with black rings. Dorsum of abdomen with three white bands on orange-black (Fig. 35); venter with black square and dark spinnerets surrounded by white (Fig. 36). Abdomen oval (Fig. 35). Total length 5.8 mm. Carapace 2.5 mm long, 1.9 wide. First femur 1.8 mm; patella and tibia 2.2; metatarsus 1.4; tarsus 0.7. Second patella and tibia 2.0 mm; third 1.5. Fourth femur 2.0 mm; patella and tibia 2.3; metatarsus 1.4; tarsus 0.7.

Male. Coloration as in female, but first femur black. Abdomen truncate anterior (Fig. 37). Total length 5.5 mm. Carapace 2.7 mm long, 1.8 wide. First femur 2.0 mm; patella and tibia 2.5; metatarsus 1.6; tarsus 0.8. Second patella and tibia 2.0 mm; third 1.5. Fourth femur 2.1 mm; patella and tibia 2.5; metatarsus 1.7; femur 0.8.

Variation. Total length of females 4.9 to 6.5 mm, males 4.2 to 5.4. Southern specimens are larger than northern ones. A specimen from Panama had a secondary median lobe on the epigynum (Fig. 34). In posterior view the median plate may be longer (ventral–dorsally) than those illustrated by Figure 33. The head of southern specimens is usually black.

The description and illustration are from specimens from Barro Colorado Island, Panama (MCZ).

Diagnosis. The two round lateral lobes, one on each side of the scape of the epigynum in ventral view (Fig. 32); the elongate median apophysis of the male palpus, the projecting terminal apophysis and its sclerotized lobed base (Fig. 38) separates

A. leucogramma from *A. grayi* and other *Alpaida* with banded abdomens.

Natural History and Distribution. I have collected specimens from between grass blades of a closely cropped pasture in Colombia. The only other record with ecological data is from brush in São Luis, Pará, Brazil. The distribution is from Panama to Argentina (Map 2).

Records. PANAMA, *Coclé*: 10 km N El Copé (MIUP). *Colón*: Santa Rosa (AMNH). *Colón* and *Panamá*: Canal area, very common (AMNH, MCZ, MIUP). *Darién*: El Real de Santa Marta (AMNH). COLOMBIA *Magdalena*: 15 km E Pueblo Bello, 500 m (AMNH). *Antioquia*: Medellín (MCZ); Santa Fé de Antioquia, 200 m (MCZ). *Meta*: Villavicencio (AMNH). *Valle*: Río Pauce (MCZ); Cali (MCZ); Lago Calima (MCZ). ECUADOR *Pichincha*: 47 km S Santo Domingo (MCZ). *Guayas*: Guayaquil (CAS); Milagro (CAS). PERU *Loreto*: Iquitos (MCZ). *Cajamarca*: Jaén (AMNH). *San Martín*: E of Tarapato (AMNH). BRAZIL *Pará*: Belém (MEG). *Amazonas*: Igarapé Belém confl. Rio Solimões (AMNH); Alto Solimões (MCN). *Mato Grosso*: Barra do Tapirapé (AMNH); Cuiabá (AMNH). *Rio de Janeiro*: Rio de Janeiro (ZMK). *Rio Grande* (AMNH). *São Paulo*: Morro do Serrote, Juquiá (MZSP); Aldeia (MZSP). *Rio Grande do Sul*: São Leopoldo (MZSP); Montenegro (MCN); Itaúba (MCN); Canela (MCN); Bajé (MCN). URUGUAY. *Montevideo* (MCZ, MNHM). PARAGUAY. *Concepción*: San Luiz (AMNH). *Presidente Hayes*: 25 Laguna (MNHNP). ARGENTINA. *Misiones*: Eldorado (AMNH); San Ignacio (MEG).

Salta: Agua Blanca (MEG). *Córdoba*: Calamuchita (MACN). *La Pampa*: Santa Rosa (MACN). *Neuquen*: El Hueco (MCZ).

Alpaida coroico new species Figures 39–43; Map 2

Holotype. Male from Coroico, Dpto. La Paz, Bolivia, 8 June 1960 (B. Malkin, AMNH). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, coxae orange. Legs with proximal two-thirds of femora orange, distal third and distal articles black. Dorsum of abdomen black with symmetrical white bordered orange marks (Fig. 41); venter black. Anterior median eyes slightly more than their diameter apart; posterior median eyes their diameter apart. Abdomen oval. Total length 7.2 mm. Carapace 2.8 mm long, 2.3 wide. First femur 2.3 mm; patella and tibia 2.7; metatarsus 1.8; tarsus 0.8. Second patella and tibia 2.5 mm; third 1.5; fourth 2.4.

Male. Coloration as in female, except for a median black patch on the thoracic groove (Fig. 42) and black articles of legs, which are orange anterior and posterior. Second tibiae slightly thicker than first and proximally swollen with about five pairs of ventral macrosetae; fourth trochanters with two small macrosetae. Total length 7.2 mm. Carapace 3.6 mm long, 2.9 wide. First femur 3.1 mm; patella and tibia 3.7; metatarsus 2.3; tarsus 0.9. Second patella and tibia 2.9 mm; third 1.9; fourth 2.9.

Note. Male and female were matched because of similar markings and proximity of collecting sites.

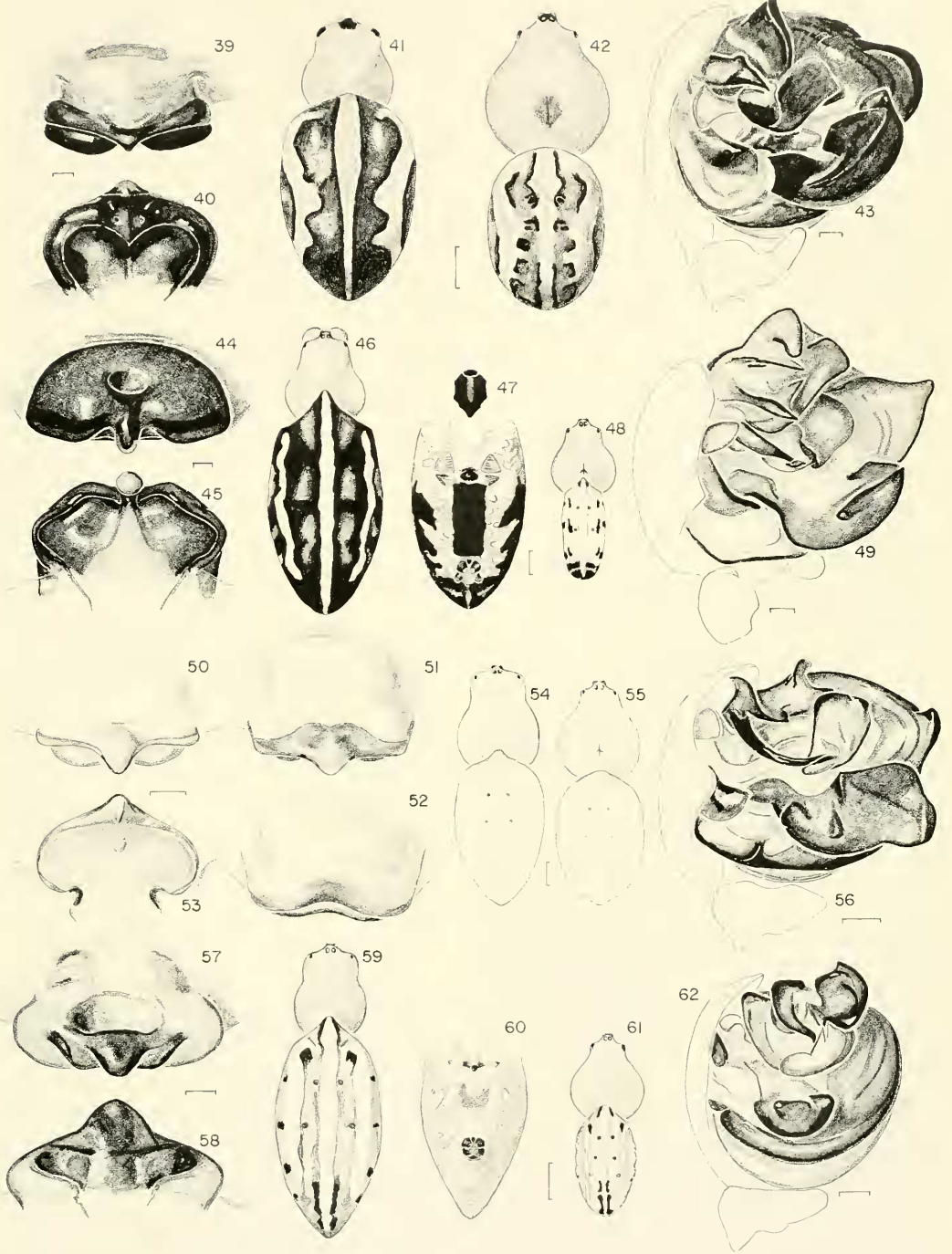
Figures 39–43. *Alpaida coroico* n. sp. 39–41, female. 39, epigynum, ventral. 40, epigynum, posterior. 41–42, male. 41, dorsal. 42, left palpus.

Figures 44–49. *A. grayi* (White). 44–47, female. 44, epigynum, ventral. 45, epigynum, posterior. 46, dorsal. 47, ventral. 48, 49, male. 48, dorsal. 49, palpus.

Figures 50–56. *A. rostratula* (Keyserling). 50–54, female. 50–52, epigynum, ventral. 52, median, lobe torn off. 53, epigynum, posterior. 54, dorsal. 55, 56, male. 55, dorsal. 56, palpus.

Figures 57–62. *A. rubellula* (Keyserling). 57–60, female. 57, epigynum, ventral. 58, epigynum, posterior. 59, dorsal. 60, ventral. 61–62, male. 61, dorsal. 62, palpus.

Scale line. 1.0 mm; genitalia, 0.1 mm.



Diagnosis. The lateral lobes of the paraxial dark band of the abdomen (Figs. 41, 42) separate the species from *A. leucogramma* and *A. grayi*. The epigynum, unlike that of related species, has a convex bilobed posterior median plate (Figs. 39, 40); the male palpus has an apically pointed terminal apophysis, a small lobe on the distal border of the embolus, and a broadly lobed tegulum (Fig. 43).

Paratypes. BOLIVIA *La Paz*: Chulumani, 1,700 m, 17–25 Dec. 1955, ♀ (L. Peña, IRSNB).

Alpaida grayi (Blackwall)
Figures 44–49; Map 2

Epeira grayi Blackwall, 1863: 34. Six female and three males from Rio de Janeiro, Brazil, marked "type" (BMNH), examined. Keyserling, 1892: 79, pl. 4, fig. 60, ♀ [not Keyserling, 1865: 809, pl. 18, figs. 9, 10].

Epeira veles Keyserling, 1880: 310, pl. 4, fig. 12. Female from Neu Freiburg [Nova Friburgo, Est. Rio de Janeiro], Brazil. First synonymized by Keyserling, 1892.

Aranea grayii.—Roewer, 1942: 844.

Lariniacantha grayi.—Archer, 1951: 15.

Araneus grayi.—Bonnet, 1955: 511.

Description. Female. Carapace orange. Chelicerae orange, dark brown distally; labium, endites black; sternum black with median longitudinal light streak. Coxae orange, legs ringed black and orange. Dorsum of abdomen with three longitudinal white bands bordered by black (Fig. 46); venter with rectangular black patch (Fig. 47). Abdomen elongate oval with antero-medial hump and two slight lateral humps. Total length 10.8 mm. Carapace 4.2 mm long, 3.1 wide. First femur 3.7 mm; patella and tibia 4.6; metatarsus 3.2; tarsus 1.4. Second patella and tibia 4.0 mm; third 2.7; fourth 4.2.

Male. Coloration as in female (Fig. 48). Second tibiae swollen, with macrosetae. Total length 7.4 mm. Carapace 3.7 mm long, 2.7 wide. First femur 3.5 mm; patella and tibia 4.2; metatarsus 2.9; tarsus 1.0. Second patella and tibia 3.4 mm; third 2.5; fourth 3.7.

Variation. Total length of females 7.8 to 14.0 mm; of males 7.2 to 10.1.

The description and illustrations are from syntype specimens of *veles* (BMNH).

Diagnosis. This species is of larger size than *A. leucogramma* and the epigynum differs by being a sclerotized semicircular projection with a notch on its anterior surface (Fig. 44); the male palpus by having a shorter median apophysis and the tegulum with a drawn out point (Fig. 49).

Records. BRAZIL *Rio de Janeiro*: Petrópolis, 850 m (AMNH); Teresópolis, 900–1,290 m (AMNH); Itatiaia (AMNH, MZSP). *São Paulo*: Salesópolis (AMNH, MZSP); São Paulo (MZSP); Itanhaém (MZSP); Boracéia (MZSP); Campos de Jordão (MZSP); Iporanga (MZSP); Alto Serra (MZSP). *Paraná*: Foz de Iguaçu (MCZ, AMNH); Curitiba (MZSP); Marumbi (MNRJ). *Santa Catarina*: Corupá (AMNH); Pinhal (AMNH); Blumenau (MCZ, MZSP). *Rio Grande do Sul*: [?] S Féo de Paula (MNRJ); Porto Alegre (MCN); Cambará do Sul (MCN). ARGENTINA *Misiones*: Eldorado (AMNH); Iguazu (MEG); Arroyo El Central, San Antonio (MEG); Gral. Manuel Belgrano (MEG); Monte Carlo (AMNH).

Alpaida rostratula (Keyserling),
new combination

Figures 50–56; Map 2

Epeira rostratula Keyserling, 1892: 82, pl. 4, fig. 62, ♂. Male holotype and juvenile female paratype from Taquara, Est. Rio Grande do Sul, Brazil (BMNH), examined.

Aranea rostratula.—Roewer, 1942: 651.

Araneus rostratulus.—Bonnet, 1955: 586.

Description. Female. Carapace, sternum, legs yellow-white. Dorsum of abdomen whitish with parallel indistinct longitudinal streaks (Fig. 54); venter of abdomen yellow-white, sides white. Eyes small. Anterior median eyes twice their diameter apart; posterior median eyes slightly more than twice their diameter apart. Abdomen elongate oval with anterior median hump (Fig. 54). Total length 5.2 mm. Carapace 2.3 mm long, 1.8 wide. First femur 2.0 mm; patella and tibia 2.3; metatarsus 1.4; tarsus 0.7. Second patella and tibia 2.1 mm; third 1.3; fourth 1.9.

Male. Coloration as in female. Dorsum of abdomen with three white streaks. Palpal patella with one large macroseta and one smaller one. Abdomen oval. Total length 4.1 mm. Carapace 2.0 mm long, 1.7 wide. First femur 1.9 mm; patella and tibia 2.3; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.8 mm; third 1.1; fourth 1.8.

Variation. Total length of females varies from 4.9 to 7.2 mm. The tip of the epigynum is torn off in some females (Fig. 52).

Diagnosis. The small eyes, light color, lightly sclerotized epigynum (Figs. 50–53) and the large squarish median apophysis and small terminal apophysis of the male palpus (Fig. 56) separate the species from *A. rubellula*.

The description and illustrations are from specimens from Rio Grande do Sul (MCN), Fig. 52 from Salta (MACN).

Records. BRAZIL *Rio Grande do Sul*: Canela, 11 Jan. 1966, ♂ (A. A. Lise, MCN 216); Rio Pardo, 10 Feb. 1969, ♀ (A. A. Lise, MCN 410); Cambará do Sul, 9 Jan. 1976, 2♀, 6♂, 6 imm. (A. A. Lise, MCN 3354), 15 Jan. 1978, 5♂ (P. C. Braum, MCN 7713). ARGENTINA *Salta*: ♀ (MCN 8492). *Buenos Aires*: Río de la Plata, Isla Martín García, Apr. 1938 (M. J. Viana, MACN 8493).

Alpaida rubellula (Keyserling),
new combination

Figures 57–62; Map 2

Epeira rubellula Keyserling, 1892: 81, pl. 4, fig. 61, ♀. Female holotype from Rio Grande do Sul, Brazil (BMNH), examined.

Araneus inexplicabilis Badcock, 1932: 23, fig. 16, ♀. Female from Nanahua, Chaco, Paraguay, near Bolivian border, [Nanawa, Fortín Presidente Ayala, Dpto. Presidente Hayes] (BMNH), examined. Bonnet, 1955: 522. NEW SYNONYMY.

Wixia nigropunctata Mello-Leitão, 1941b: 214, figs. 21, 22, ♀. Female from El Rabón, Prov. Santa Fé, Argentina (MLP), examined. Brignoli, 1983: 281. NEW SYNONYMY.

Wixia albotaeniata Mello-Leitão, 1942: 403, figs. 25, 26, ♀. Female from Basail, Prov. Chaco, Argentina, (MLP), examined. Brignoli, 1983: 281. NEW SYNONYMY.

Aranea inexplicabilis:—Roewer, 1942: 845.

Aranea rubellula:—Roewer, 1942: 851.

Araneus rubellulus:—Bonnet, 1955: 586.

Description. Female. Carapace, sternum orange. Legs orange with narrow black rings at end of articles. Dorsum of abdomen with three white, longitudinal bands in between black spots (Fig. 59); sides with dorsoventral white marks; venter orange gray with only indistinct, dusky marks (Fig. 60); black spinnerets. Abdomen oval, with anterior median hump, posteriorly pointed, sides slightly scalloped (Fig. 60). Total length 8.0 mm. Carapace 2.7 mm long, 2.1 wide. First femur 2.1 mm; patella and tibia 2.7; metatarsus 1.5; tarsus 0.8. Second patella and tibia 2.3 mm; third 1.5; fourth 2.5.

Male. Coloration as in female (Fig. 61). Second tibiae with macrosetae. Abdomen oval. Total length 4.8 mm. Carapace 2.3 mm long, 1.8 wide. First femur 2.1 mm; patella and tibia 2.5; metatarsus 1.4; tarsus 0.6. Second patella and tibia 1.9 mm; third 1.3; fourth 2.1.

Variation. Total length of females 6.6 to 8.5 mm, males 4.9 to 5.3. The lobe of the epigynum is torn off in some females, including the type specimen of *A. inexplicabilis*.

The description and illustrations are of specimens from Paraguay (MCZ).

Diagnosis. Females are similar to *A. trispinosa* and *A. keyserlingi* but lack anterior spines on the abdomen (Fig. 59). Unlike *A. rostratula*, the epigynum has a wide notch (Fig. 57). The male palpus has a much shorter embolus (Fig. 62) than the two similar species.

Natural History. Kochalka (in letter) states that, like *A. bicornuta*, *A. rubellula* is found in vegetation about 2 m off the ground. The egg-sac is bright yellow, smooth, and very tightly pressed against the vegetation. It is guarded by the female.

Records. BRAZIL *Mato Grosso*: Chapada dos Guimarães (MCN). *Goiás*: Aragarcas (MZSP). *Rio Grande do Sul*: Parque Est. de Nonoai (MCN); Garruchos São Borja (MCN); Quaraí (MCN); Santa Rosa (MCN). PARAGUAY *Concepción*: Con-

cepción (MCZ). *Alto Paraná*: Puerto Ber-toni (MCZ). *La Cordillera*: San Bernardino (MCZ). *Itapúa*: 20 km NNE Puerto Cap-itán Meza (MCZ). *Central*: Luque (MNHN); San Lorenzo (MNHN, MCZ). ARGENTINA *Misiones*: Iguazu (MEG); Eldorado (AMNH). *Salta*: Orán (MEG). *Chaco*: Roque Sáenz Peña (MLP). *Cór-doba*: Calamuchita (MACN); [?] Altos Pampa (MLP). *Mendoza*: San Luis Chosmes (MCZ); ? Canigal (MACN). *Río Negro*: El Bolson (AMNH).

Alpaida trispinosa (Keyserling),
new combination

Figures 63–68; Map 2

Epeira grayi:—Keyserling, 1865: 809, pl. 18, figs. 9, 10. Misidentification, not *grayi* Blackwall.

Epeira trispinosa Keyserling, 1892: 78, pl. 4, fig. 59, ♀, ♂. Specimens from Miracena, Serra Vermelha, Est. Rio de Janeiro, Uruguay and New Granada, (BMNH). Female lectotype from Rio de Janeiro here designated and one female, one male para-lectotype of this species and three female, two male paralectotypes that are *A. keyserlingi*.

Aranea trispinosa:—Roewer, 1942: 854.

Araneus trispinosus:—Bonnet, 1955: 619.

Note. Keyserling's description and il-lustrations appear to be a composite of this species and *Alpaida keyserlingi*. I chose a lectotype for the name *trispinosa* of the more common and widespread species.

Description. Female from Paraguay. Carapace light orange-brown with a median dark line; sternum, legs light orange-brown; legs with narrow black rings. Dor-sum of abdomen with three white bands on gray and a pair of black spots on pos-terior (Fig. 65); venter with indistinct gray

marks (Fig. 66). Abdomen elongate with three anterior spines (Fig. 65). Total length 6.2 mm. Carapace 1.9 mm long, 1.4 wide. First femur 1.8 mm; patella and tibia 2.0; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.7 mm; third 1.1; fourth 2.0.

Male from Paraguay. Coloration as in female (Fig. 67). Fourth coxae with three to four macrosetae; fourth trochanters with two macrosetae. Abdomen elongate with median anterior hump (Fig. 67), but no spines. Total length 4.8 mm. Carapace 2.0 mm long, 1.5 wide. First femur 2.0 mm; patella and tibia 2.4; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.7 mm; third 1.1; and fourth, 2.2.

Variation. Total length of females 4.5 to 6.7 mm, males 3.6 to 5.3. The descrip-tions and illustrations are from specimens from Paraguay (MCZ).

Diagnosis. Females differ from most *Al-paida* by having three anterior spines on the abdomen, the median one anterior to the laterals (Fig. 65), from *A. keyserlingi* and *A. monzon* by having the epigynum with a rounded median lobe framed by a lobe on each side in ventral view (Fig. 63). The male differs by having the embolus of the palpus coiled, a relatively small lat-erally pointing terminal apophysis and the median apophysis with a giant projecting tooth (Fig. 68).

Natural History and Distribution. Specimens have been collected in vege-tation on stream banks in northern Colom-bia; in campo-grassland in Mato Grosso. *Alpaida trispinosa* is found from Panama to Argentina, and is most common in southern Brazil (Map 2).

Figures 63–68. *Alpaida trispinosa* (Keyserling). 63–66, female. 63, epigynum, ventral. 64, epigynum, posterior. 65, dorsal. 66, ventral. 67, 68, male. 67, dorsal. 68, left palpus.

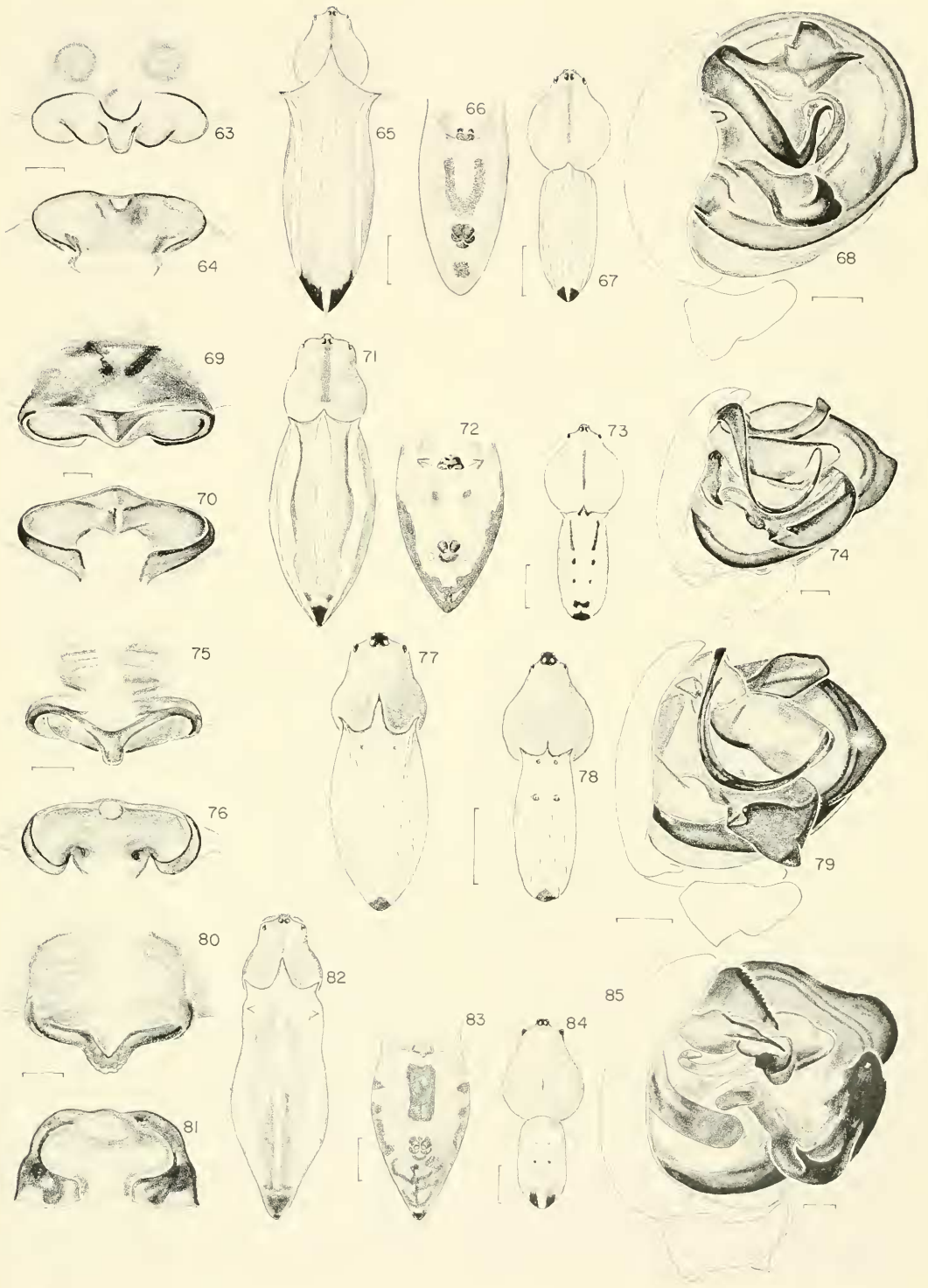
Figures 69–74. *A. keyserlingi* n. sp. 69–72, female. 69, epigynum, ventral. 70, epigynum, posterior. 71, dorsal. 72, ventral. 73, 74, male. 73, dorsal. 74, palpus.

Figures 75–79. *A. monzon* n. sp. 75–77, female. 75, epigynum, ventral. 76, epigynum, posterior. 77, dorsal. 78, 79, male. 78, dorsal. 79, palpus.

Figures 80–83. *A. kartabo* n. sp., female. 80, epigynum, ventral. 81, epigynum, posterior. 82, dorsal. 83, ventral.

Figures 84, 85. *A. murinho* n. sp., male. 84, dorsal. 85, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



Records. PANAMA *Chiriquí*: Playa las Lajas, (MIUP). *Colón*: Fort Sherman (MCZ). *Panamá*: Summit (AMNH). LESSER ANTILLES *Trinidad*: St. Augustine Univ. campus (MCZ). COLOMBIA *Magdalena*: Río Don Diego, 70 km E of Santa Marta (SMF). *Cesar*: Valledupar (AMNH). *Antioquia*: Santa Fé de Antioquia, Río Cauca, 700 m (MCZ); Mutatá (MCZ). *Valle*: Cali, 1,000 m (MCZ). *Vaupés*: Mitú, 200 m (MCZ). BRAZIL *Amazonas*: Manaus, Ponta Negra (MEG). *Mato Grosso*: 260 km N Xavantina, 12°49'S, 51°46'W (MCZ). *Rio de Janeiro*: Rio de Janeiro (AMNH); S. Antonio do Imbe, S. Maria Madalena (AMNH). *Rio Grande do Sul*: Santa Rosa (AMNH); Santa Maria (MCN). PARAGUAY *Concepción*: Territ. Fondrière (MCZ). *Caazapá*: Pastoreo (MCZ). *Paraguarí*: San Luis (AMNH). ARGENTINA *Misiones*: Eldorado (AMNH). *Salta*: NE of Salta, 350–1,500 m (MCZ).

Alpaida keyserlingi new species
Figures 69–74; Map 2

Holotype. Female holotype, three females, one male and three immature paratypes from Rio de Janeiro, Brazil (BMNH). The species is named after the arachnologist, who had mislabeled the specimens.

Note. All BMNH specimens are paralectotypes of *Epeira trispinosa* Keyserling.

Description. Female. Carapace yellowish with a median dusky line. Sternum, coxae, legs yellowish. Dorsum of abdomen with three white stripes (Fig. 71) and posterior black spot; venter with dark spinnerets, sides and posterior dusky. Abdomen with three spines on truncate anterior. Total length 7.0 mm. Carapace 2.5 mm long, 2.0 wide. First femur 2.1 mm; patella and tibia 2.5; metatarsus 1.8; tarsus 0.6. Second patella and tibia 2.1 mm; third 1.5; fourth 2.2

Male. Coloration as in female but less white, more black on the abdomen (Fig. 73). Fourth coxae with a short macroseta. Abdomen as in female. Total length 5.0 mm. Carapace 2.2 mm long, 1.9 wide. First

femur 2.1 mm; patella and tibia 2.5; metatarsus 1.5; tarsus 0.7. Second patella and tibia 2.1 mm; third 1.3; fourth 2.0.

Variation. Females vary in total length from 5.6 to 7.8 mm, males from 3.9 to 5.0.

The specimens described and illustrated are from the holotype and paratypes (BMNH).

Diagnosis. Females differ from *A. trispinosa* by having the three abdominal spines in a row (Fig. 71) and the epigynum with a more pointed median lobe, lacking the lobe on each side (in ventral view Fig. 69). Males differ from *A. trispinosa* and *A. monzon* by having a curved bar as terminal apophysis and having a longer median apophysis in the palpus (Fig. 74).

Paratypes. BRAZIL *Rio de Janeiro*: Duque de Caxias, Sept. 1961, 7♂, 4♀; Silva Jardim, Aug. 1975, 2♂, 3♀; Nova Iguaçu, 7 Sept. 1961, 3♂; Muriqui, Manaratiba, Oct. 1961, several ♂, ♀ (all M. Alvarenga, AMNH). *São Paulo*: Caraguatatuba 2 Apr. 1962, ♀ (K. Lenko, MZSP 7797), July 1965, 6♀ (Exp. Dept. Zool., MZSP 4935, 4693).

Alpaida monzon new species
Figures 75–79; Map 2

Holotype. Female from Monzón Valley, Tingo María, Dpto. Huánuco, Peru, 23 Sept. 1954 (E. I. Schlinger, E. S. Ross, CAS). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, coxae orange-yellow. Second femora mostly black; legs with wide black rings. Dorsum of abdomen with two white streaks, one each behind each lateral anterior spine; posterior tip black; spinnerets black. Posterior median eyes 1.5 times diameter of anterior median eyes; anterior lateral eyes 0.6; posterior lateral eyes 0.8. Abdomen elongate with three anterior spines (Fig. 77), covered with scattered setae. Total length 3.8 mm. Carapace 1.6 mm long, 1.3 wide. First femur 1.7 mm; patella and tibia 1.9; metatarsus 1.2; tarsus 0.6. Second patella and tibia 1.5; third 0.9; fourth 1.5.

Male. Coloration as in female; legs darker. Venter of abdomen dusky to black. Eyes

as in female. Abdomen as in female, with three teeth anterior and setae (Fig. 78). Second tibia not swollen. Total length 3.5 mm. Carapace 1.6 mm long, 1.3 wide. First femur 1.8 mm; patella and tibia 1.8; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.3; third 0.9; fourth 1.3.

Variation. Females vary in total length from 3.8 to 5.5 mm.

Diagnosis. Females have longer spines than *A. trispinosa* and *A. keyserlingi* and the spines are in a transverse row (Fig. 77); the epigynum (Figs. 75, 76) differs from *A. trispinosa* by having a distinct lip, from *A. keyserlingi* by having a rounded lobe. Males differ from *A. keyserlingi*, which also has three anterior spines on the abdomen, by the shape of the median apophysis (Fig. 79).

Paratypes. Type locality, 19 Oct. 1954, ♀, ♂ (E. I. Schlinger, E. I. Ross, CAS).

Alpaida kartabo new species

Figures 80–83; Map 2

Holotype. Female from Kartabo, Bartica District, Guyana, 1920 (AMNH). The specific name is a noun in apposition after the locality.

Note. Specimen discolored from storage in cork-stoppered vials.

Description. Female. Carapace with yellow median dusky line and rim of thorax with dusky band. Sternum, legs yellow. Dorsum of abdomen with longitudinal bands, posterior tip black (Fig. 82); venter without pigment except for rectangular dusky patch between epigynum and spinnerets, maculated black behind spinnerets. Posterior median eyes 1.4 diameters of others, which are subequal in size. Anterior median eyes 1.5 their diameter apart; posterior median eyes their diameter apart. Abdomen elongated, pointed behind with five anterior spines (Fig. 82). Total length 7.4 mm. Carapace 2.5 mm long, 2.0 wide. First femur 2.6 mm; patella and tibia 2.9; metatarsus 2.2; tarsus 1.0. Second patella and tibia 2.5 mm; third 1.6; fourth 2.5.

Note. Epigynum has a seam where distal part may break off.

Diagnosis. The female is distinguished

from *A. monzon* and related species by two additional spines at the anterior end of the abdomen (Fig. 82) and by the wider median lobe containing the notch of the epigynum (Fig. 80).

Alpaida murtinho new species

Figures 84, 85; Map 2

Holotype. Male from Vila Murtinho, Rondônia, Brazil, 3 April 1922 (J. H. Williamson, ex MCZ, MZSP). The specific name is a noun in apposition after the locality.

Description. Male. Carapace orange; sternum orange with dusky mark in middle. Legs yellow-white with dorsal longitudinal dark line. Dorsum of abdomen with three longitudinal white lines and a pair of black patches on posterior end (Fig. 84); venter black. Fourth trochanters with a short macroseta. Abdomen shield-shaped, pointed behind. Total length 4.8 mm. Carapace 2.7 mm long, 2.1 wide. Third patella and tibia 1.5 mm; fourth 2.4.

Note. This male, unlike others, has a joint between radix and embolus-terminal apophysis; it may not belong in the genus *Alpaida*.

Diagnosis. This male differs from *A. leucogramma* and *A. coroico* by the shape of the median apophysis, a distal lobe and proximal point, and the denticles on the distal margin of the small terminal apophysis (Fig. 85).

Alpaida cuiaba new species

Figures 86–89; Map 2

Holotype. Female from Cuiabá, Mato Grosso, Brazil, Nov. 1963 (M. Alvarenga, AMNH). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, coxae, legs orange. Dorsum of abdomen banded black and white (Fig. 88); venter with black patch on orange, spinnerets brown with black ring around spinnerets and a black band under overhang behind spinnerets (Fig. 89). Abdomen oval, rounded in front, elongate behind spinnerets (Fig. 89). Total length 5.6 mm. Carapace 1.9 mm, 1.3 wide. First femur 1.7 mm; patella and tibia 1.9; metatarsus 1.3;

tarsus 0.6. Second patella and tibia 1.6 mm; third 0.9; fourth 1.7.

Diagnosis. The female is distinguished from *A. chapada* and other similar species by the abdomen, extended into a tail posterior to the spinnerets (Figs. 88, 89), and by the notch anterior to the median lobe of the epigynum (Fig. 86).

***Alpaida cachimbo* new species**
Figures 90, 91; Map 2

Holotype. Male from 260 km N of Xavantina, 12°49'S, 51°46'W, 400 m, Est. Mato Grosso, Brazil, Feb.–Apr. 1969 (Xavantina-Cachimbo Expedition, ex MCZ, MZSP). The specific name is a noun in apposition after the locality.

Description. Male. Carapace dark orange; sternum orange. Legs dusky orange. Dorsum of abdomen with three white longitudinal lines and three pairs of black marks (Fig. 90); venter dusky orange, spinnerets black, and, posteriorly, a black longitudinal band under overhang. Eyes small. Anterior median eyes 1.5 their diameter apart; posterior median eyes their diameter apart. Second tibiae not modified. Abdomen elongate, rounded behind. Total length 3.0 mm. Carapace 1.3 mm long, 0.9 wide. First femur 1.5 mm; patella and tibia 1.7; metatarsus 1.2; tarsus 0.5. Second patella and tibia 1.3 mm; third 0.7; fourth 1.2.

Natural History. The specimen was collected in campo-grassland.

Diagnosis. The male is distinguished from others by the even U-shaped curvature of the long embolus (Fig. 91).

***Alpaida hoffmanni* new species**
Figures 92–96; Map 2

Holotype. Female from Chapada dos Guimarães, Mato Grosso, Brazil, 18 Nov. 1983, ♀ (M. Hoffmann, MCN no. 11977). The species is named after the collector.

Description. Female. Carapace yellow with indistinct paired dusky marks. Sternum, coxae yellow. Legs yellow with narrow ring on distal end of all articles, those on femur broken ventrally. Dorsum of abdomen with paired pigmentless scalloped marks; sides dorsally white, a small black spot two-thirds toward posterior tip (Fig. 94); venter yellowish gray without pigment. Anterior median eyes slightly more than their diameter apart; posterior median eyes their diameter apart. Abdomen elongate, pointed behind with shoulder humps and anterior median hump. Total length 7.2 mm. Carapace 2.5 mm long; 1.9 wide. First femur 2.3 mm; patella and tibia 2.8; metatarsus 1.9; tarsus 0.7. Second patella and tibia 2.4 mm; third 1.5; fourth 2.5.

Male. Coloration as in female, with legs dusky. Dorsum marked as in Figure 95; venter black in between genital area and spinnerets; sides orange. Second tibiae as thick as first. Total length 3.4 mm. Carapace 1.8 mm long, 1.5 wide. First femur 1.7 mm; patella and tibia 1.8; metatarsus 1.1; tarsus 0.6. Second patella and tibia 1.5 mm; third 1.0; fourth 1.6.

Note. It is uncertain if the male belongs with the female.

Figures 86–89. *Alpaida cuiaba* n. sp., female. 86, epigynum, ventral. 87, epigynum, posterior. 88, dorsal. 89, ventral.

Figures 90, 91. *A. cachimbo* n. sp., male. 90, dorsal. 91, left palpus.

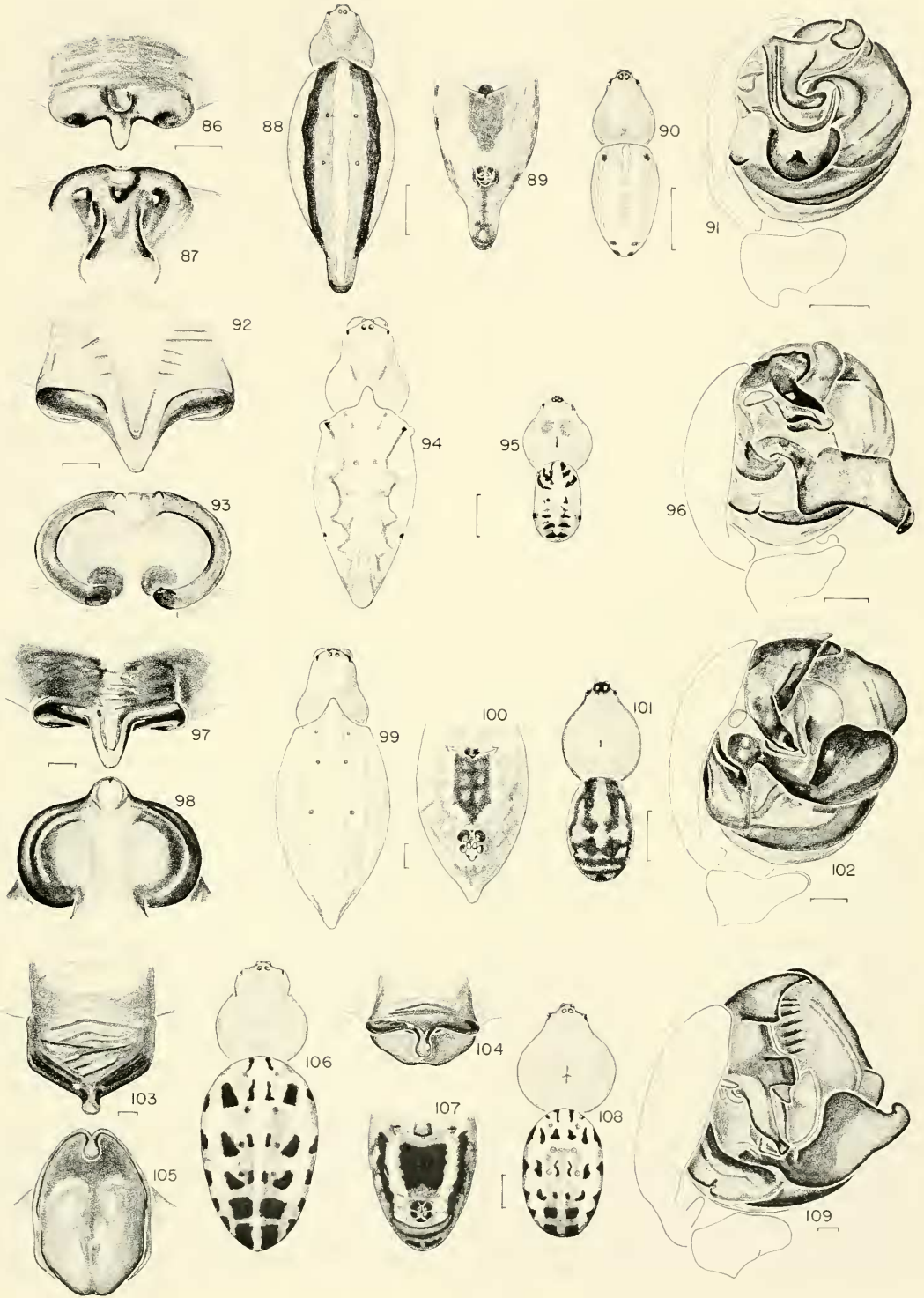
Figures 92–96. *A. hoffmanni* n. sp. 92–95, female. 92, epigynum, ventral. 93, epigynum, posterior. 94, dorsal. 95, 96, male. 95, dorsal. 96, palpus.

Figures 97–100. *A. chapada* n. sp., female. 97, epigynum, ventral. 98, epigynum, posterior. 99, dorsal. 100, ventral.

Figures 101, 102. *A. constant* n. sp., male. 101, dorsal. 102, palpus.

Figures 103–109. *A. veniliae* (Keyserlingi). 103–106, female. 103, epigynum, anterior. 104, epigynum, ventral. 105, epigynum, posterior. 106, dorsal. 107, ventral. 108, 109, male. 108, dorsal. 109, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



Variation. Total length of females from 6.0 to 7.2 mm, males from 3.2 to 3.4.

The description and illustrations are of the holotype and a male from Mato Grosso (MCN).

Diagnosis. The scalloped markings on the female abdomen (Fig. 94), the epigynum whose median lobe is not distinctly set off (Fig. 92) and two dorsal, round, dark marks in posterior view (Fig. 93) separate the females from others. Males differ by the large, curved, projecting median apophysis of the palpus (Fig. 96).

Paratypes. BRAZIL *Bahia:* Encruzilhada, 960 m, Nov. 1973, ♂ (M. Alvarenga, AMNH). *Mato Grosso do Sul:* Três Lagoas, 1964, ♀ (C. D. Z., MZSP 3912). *Minas Gerais:* Pedra Azul, July 1970, 2♀, 2♂ (F. M. Oliveira, AMNH). *Rio Grande do Sul:* Santa Rosa, 2 Jan. 1984, ♀ (A. D. Brescovit, MCN 11915). PARAGUAY *Caazapá:* Pastoreo, ♀ (D. Wees, MCZ).

Alpaida chapada new species

Figures 97–100; Map 2

Holotype. Female from Chapada dos Guimarães, Est. Mato Grosso, Brazil, 1 Dec. 1983 (M. Hoffmann, MCN no. 11968). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange yellowish, sternum orange. Legs dusky yellowish with narrow black rings at ends of articles and some on middle. Dorsum of abdomen indistinctly banded (Fig. 99); venter with median black patch and white line on each side (Fig. 100). Abdomen elongated, pointed in front and with shoulder humps. Total length 12 mm. Carapace 3.7 mm long, 2.7 wide. First femur 3.2 mm; patella and tibia 4.0; metatarsus 2.8; tarsus 1.0. Second patella and tibia 3.4 mm; third 2.3; fourth 3.6.

Diagnosis. Females differ from most other *Alpaida* species by the shape of the abdomen and from *A. hoffmanni* by the straight longitudinal bands of the abdomen (Fig. 99), and by having the scape of the epigynum more distinctly set off (Figs. 97, 98) and a rounded ridge laterally on

the median posterior plate just inside the lip (Fig. 98).

Paratypes. BRAZIL *Pará:* 80 km E Canindé, Rio Maracacume, 22–23 May 1963, ♀ (B. Malkin AMNH). *Mato Grosso:* Chapada dos Guimarães, Nov. 1963, 3♀ (M. Alvarenga, AMNH, MCZ).

Alpaida constant new species

Figures 101, 102; Map 2

Holotype. Male from Benjamin Constant vicinity, Est. Amazonas, Brazil, 18 Sept. 1962 (W. L. Brown, ex MCZ, MZSP). The specific name is a noun in apposition after the locality.

Description. Male. Carapace orange-yellow, eye area, rim dusky. Labium yellow. Endites dusky. Sternum yellow with median dusky mark. Coxae, legs dusky yellow. Dorsum of abdomen with black marks, some white pigment on shoulders and sides (Fig. 101); venter black with two parallel pigmentless lines. Posterior median eyes 0.8, anterior laterals and posterior laterals 0.6 diameter of anterior median eyes. Second tibiae slightly curved at base, with some macrosetae; third and fourth trochanters with a short macroseta. Abdomen oval. Total length 4.2 mm. Carapace 2.2 mm long, 1.7 wide. First femur 2.5 mm; patella and tibia 2.9; metatarsus 2.1; tarsus 0.9. Second patella and tibia 2.1 mm; third 1.9; fourth 2.7.

Diagnosis. The male is distinguished from others by the large distally facing lobe of the median apophysis (Fig. 102).

Alpaida veniliae (Keyserling)

Figures 103–109; Map 2

Epeira veniliae Keyserling, 1865: 817, pl. 19, fig. 23, ♀, ♂. Seven female and one male syntypes from New Granada [Spanish colony of Colombia and Panama] (BMNH), examined. Keyserling, 1893: 256, pl. 13, fig. 191, ♀, ♂.

Epeira pantherina Taczanowski, 1872: 132. Male lectotype here designated from Uassa [Uaçá, Amapá, Brazil] (PAN), examined. NEW SYNONYMY.

Epeira unguiformis Keyserling, 1893: 237, pl. 11, fig. 177, ♀. Female from Rio Grande do Sul, Brazil (BMNH), examined. NEW SYNONYMY.

Araneus borellii Simon, 1897c: 6. Female from San Pablo, Prov. Tucumán, Argentina (MZUT), ex-

- amed. Tullgren, 1905: 32, pl. 4, fig. 10, ♀, ♂. NEW SYNONYMY.
- Araneus veniliae*:—F. P.-Cambridge, 1904: 516, pl. 49, figs. 23–24, ♀, ♂. Bonnet, 1955: 627.
- Aranea borellii*:—Roewer, 1942: 849.
- Aranea veniliae*:—Roewer, 1942: 859.
- Araneus pantherina*:—Bonnet, 1955: 562.
- Araneus unguiformis*:—Roewer, 1942: 855. Bonnet, 1955: 626.
- Subaraneus veniliae*:—Caporiacco, 1948: 662.
- Lariniacantha veniliae*:—Archer, 1951: 15.
- Metepeira wiedenmeyeri* Schenkel, 1953: 22, fig. 20. Male holotype from Pozón, [Falcon] Venezuela (NMB), examined. Brignoli, 1983: 276. NEW SYNONYMY.
- Neoscona borellii*:—Bonnet, 1958: 3057.
- Metazygia unguiformis*:—Valle and Valle, 1972: 33.

Description. Female from Panama. Carapace, sternum orange. Legs orange with narrow black rings. Dorsum of abdomen with three white lines and paired black spots (Fig. 106); venter black with white line on each side (Fig. 107). Living specimens have white stripe bordered by red. Carapace slightly pubescent. Abdomen oval, pointed behind, slightly pubescent. Total length 8.6 mm. Carapace 3.6 mm long, 2.8 wide. First femur 3.4 mm; patella and tibia 4.3; metatarsus 3.1; tarsus 1.3. Second patella and tibia 3.6 mm; third 2.5; fourth 3.8.

Male from Panama. Coloration as in female (Fig. 108). Legs with strong macrosetae, one short one under second femora, five to seven under third and fourth femora; second tibiae slightly swollen. Total length 7.4 mm. Carapace 3.9 mm long, 3.1 wide. First femur 3.8 mm; patella and tibia 4.5; metatarsus 4.5; tarsus 1.5. Second patella and tibia 3.7 mm; third 2.5; fourth 3.8.

Variation. Females' total length varies from 6.3 to 12.9 mm, males from 6.3 to 8.7. The smallest specimens come from Colombia, the largest from eastern Brazil. A photograph of a living juvenile specimen has carapace, legs yellowish, abdomen with dorsal black marks surrounded by red, three yellowish lines and white pubescence.

The specimens described and illustrated are from Panama (MCZ).

Diagnosis. The females are distinguished by the distinct color pattern (Fig. 106) and the convex posterior median plate of the epigynum, which is much longer than wide (Fig. 105). The male is distinguished by the large median apophysis with a distal hook and the series of slats on the tegulum under the terminal apophysis (Fig. 109).

Natural History and Distribution. *Alpaida veniliae* has been collected as wasp prey in Trinidad and Leticia, Colombia; on *Eichhornia crassipes* in Surinam; sugarcane in Venezuela; swampy pond floating vegetation in Colombia; in tropical dry rain forest at Remedios, Colombia; on swamp plants in Dpto. Loreto, Peru; and orange and coffee plantations in São Paulo, Brazil. Behavior observations are recorded by Valle and Valle (1972): the web is 20 to 40 cm in diameter. Kochalka (in letter) writes that in Paraguay *A. veniliae* is found near water, the web is one meter above the ground. The spider is at its hub at night. The egg-sac is tangled, loosely attached to vegetation. In a rice field in Chigorodó, Colombia, the species was found to prey on Cercopidae, Cicadellidae, Pyralidae and Diptera, and immature Orthoptera (E. J. Urueta, personal communication). It is found from Panama to Argentina (Map 2).

Records. PANAMA *Herrera*: Desierto de Sarigua (MIUP). *Colón*: Santa Rosa (AMNH); Frijoles (MCZ). *Panamá*: Pedro Miguel (MCZ); Barro Colorado Isl. (MCZ). *Darién*: El Real de Santa María (AMNH).

LESSER ANTILLES *Trinidad*: Point Fortin (AMNH); St. Augustine (AMNH). VENEZUELA *Lara*: Barquisimeto (CAS). GUYANA Georgetown (AMNH). SURINAM Brokopondo Lk. (AMNH); Paramaribo (AMNH). FRENCH GUIANA Cayenne (PAN). COLOMBIA *Magdalena*: Isla de Salamanca (AMNH). *Atlántico*: Baranquilla (MNHNP). *Bolívar*: Lago de Ayapel, Río Muñoz (AMNH). *Antioquia*: Chigorodó, 30 m (MCZ); Mutatá (MCZ); Remedios (MCZ). *Chocó*: Río San

Juan, 400 m (MCZ). *Meta*: ca. 15 km SW Puerto López, 200 m (MCZ); 20 km S Porvenir, 170 m (MCZ); Porvenir (MCZ); Carimagua (MCZ). *Amazonas*: Leticia (AMNH); 25 km N of Leticia, 90 m (MCZ). PERU *Loreto*: Río Samiria (AMNH); Iquitos (MCZ); Prov. Alto Amazonas (MCZ). BRAZIL *Roraima*: Ireng River (AMNH). *Amazonas*: Alto Solimões (MCN); Rio Autaž Caprauga (NHRM); Rio Japurá Chigago (NHRM); [?] Lago Baixio (MCZ). *Pará*: Belém (AMNH, MCZ). *Ceará*: Fortaleza (MNRJ). *Pernambuco*: Lago Xidara Capim Flutuante (MNRJ); Igarapeçu Capim Flutuante (MNRJ); S. Pedro da Aldeia (MNRJ). *Mato Grosso*: Barra do Tapirape (AMNH). *Rio de Janeiro*: Itatiaia (AMNH). *São Paulo*: Jaboticabal (MCZ); São Paulo (MCZ). *Paraná*: Foz do Iguazu (MCZ, MNRJ). *Santa Catarina*: Corupa (AMNH). *Rio Grande do Sul*: Triunfo (MCN); Novo Hamburgo (MCN); Pelotas (AMNH); Porto Alegre (MCN); Viamão (MCN); Muçum (MCN). PARAGUAY *Paraguay*: near Ybytymí (MCZ); Parque Nac. Ybyouí (MNHNP). *Alto Paraná*: km 12 de Stroessner (MNHNP). *Amambay*: Parque Nac. Cerro Corá (MNHNP, MCZ). *Caazapá*: Pastoreo (MCZ). BOLIVIA *El Beni*: Espíritu, Yacuma (ZSM). ARGENTINA *Misiones*: Montecarlo (AMNH); Iguazú (MEG); General M. Belgrano (MEG). *Chaco*: Roque Sáenz Peña (MLP); Pto. Aguirre (MACN). *Corrientes*: Corrientes (MACN). *Santa Fé*: Arrufó (MCZ). *Salta*: Laurel de Chicoana (MCZ). *Buenos Aires*: Buenos Aires (MCZ). *Río Negro*: El Bolsón area (AMNH).

Alpaida tabula (Simon),
new combination

Figures 110–115; Map 3

Araneus tabula Simon 1895: 815, fig. 867, ♀. Two female syntypes from "Amazonas" (MNHN), examined. Bonnet, 1955: 608.

Araneus multipunctatus Simon; 1895: 815. Female holotype from Rio Salobro, Mato Grosso, [Mato Grosso do Sul, Brazil] (MNHN), examined. Bonnet, 1955: 547. Nomen Nudum.

Aranea tabula:—Roewer, 1942: 853.

Aranea multipunctata:—Roewer, 1942: 847.

Note. A *nomen nudum* need not be cited. Both Roewer (1942) and Bonnet list *A. multipunctata*, but only Bonnet (1955) indicates that the name lacks description and diagnosis. Specimens from the Paris museum with this name on the label were examined.

Description. Female from Ecuador. Head black; thorax yellow. Chelicera black, distally orange. Sternum, coxae yellow. Second and third femora, tibiae, metatarsi, tarsi black, other femora and all patellae yellow. Dorsum of abdomen yellow with black patches, anterior black (Fig. 112); venter, black with yellow (Fig. 113). Abdomen shield-shaped (Fig. 112). Total length 9.4 mm. Carapace 3.5 mm long, 3.4 wide. First femur 3.4 mm; patella and tibia 4.2; metatarsus 2.7; tarsus 1.1. Second patella and tibia 3.7 mm; third 2.4; fourth 3.6.

Male from Bahia. Coloration as in female. Fourth trochanters with two short macrosetae. Abdomen oval, pointed anteriorly (Fig. 114). Total length 4.8 mm.

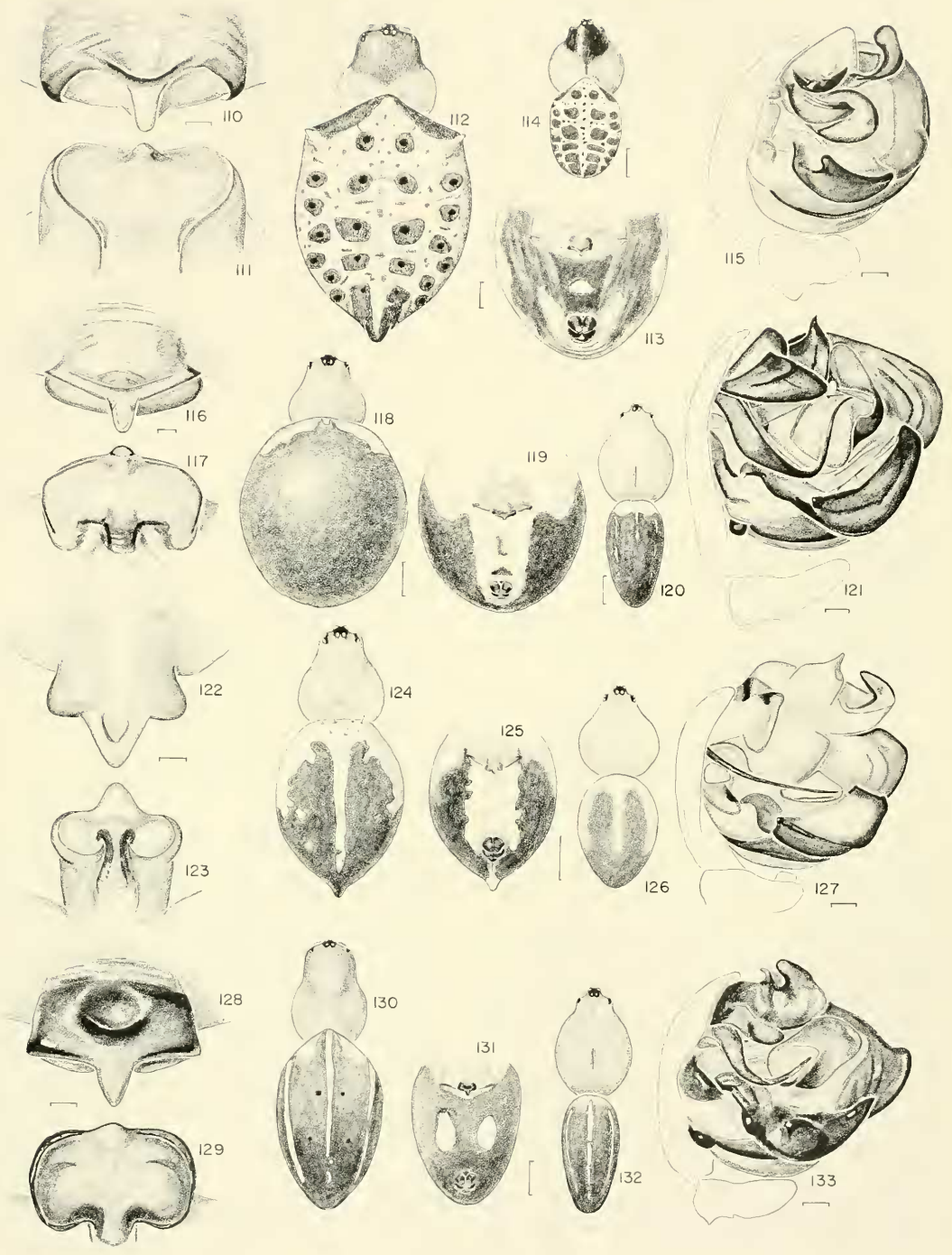
Figures 110–115. *Alpaida tabula* (Simon). 110–113, female. 110, epigynum, ventral. 111, epigynum, posterior. 112, dorsal. 113, ventral. 114, 115, male. 114, dorsal. 115, left palpus.

Figures 116–121. *A. rioja* n. sp. 116–119, female. 116, epigynum, ventral. 117, epigynum, posterior. 118, dorsal. 119, ventral. 120, 121, male. 120, dorsal. 121, palpus.

Figures 122–127. *A. carminea* (Taczanowski). 122–125, female. 122, epigynum, ventral. 123, epigynum, posterior. 124, dorsal. 125, ventral. 126, 127, male. 126, dorsal. 127, palpus.

Figures 128–133. *A. alvarengai* n. sp. 128–131, female. 128, epigynum, ventral. 129, epigynum, posterior. 130, dorsal. 131, ventral. 132, 133, male. 132, dorsal. 133, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



Carapace 2.7 mm long, 2.2 wide. First femur 2.7 mm; patella and tibia 3.4; metatarsus 2.1; tarsus 1.1. Second patella and tibia 2.7 mm; third 1.7; fourth 2.5.

Variation. Total length of females 9.2 to 10.0 mm. The syntype female and a male from Bahia (MCN) are described and illustrated.

Diagnosis. In both sexes, the color and form of the abdomen (Figs. 112–114) are more distinctive than the genitalia.

Records. GUYANA *Essequibo*: near Mazaruni Hd., Pakaraima Mts., ♀ (Myers, AMNH). ECUADOR *Napo*: “Napo,” May 1946, ♀ (Willina, MACN). PERU *Junín*: Pumamarca, 1,900 m, ♀ (K. Jelski, J. Sztolcman, PAN). BRAZIL *Bahia*: Fazenda Santa Antonio, Uruçuca, 24 Oct. 1978, ♂ (J. S. Santos, MCN 10165). BOLIVIA *La Paz*: Nigrillani, ♀ (W. Willines, MLP).

Alpaida rioja new species

Figures 116–121; Map 2

Holotype. Male from Ilias (?), Prov. La Rioja, Argentina, 1948 (P. M. Gomez, MACN no. 8451). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange. Sternum light orange with some white pigment spots. Coxae light orange; legs black. Dorsum of abdomen black except shoulders orange-white (Fig. 118); venter orange-white, sides black (Fig. 119). Secondary eyes slightly smaller than anterior medians. Fourth legs slightly longer than first. Abdomen oval, almost spherical. Total length 7.9 mm. Carapace 2.6 mm long, 2.3 wide. First femur 2.0 mm; patella and tibia 2.7; metatarsus 1.5; tarsus 0.8. Second patella and tibia 2.3 mm; third 1.6; fourth 2.7.

Male. Coloration as in female except for white streaks on the dorsum of the abdomen (Fig. 120). Total length 6.8 mm. Carapace 3.5 mm long, 2.5 wide. First femur 2.8 mm; patella and tibia 3.6; metatarsus 2.2; tarsus 0.9. Second patella and tibia 2.8 mm; third 2.0; fourth 3.2.

Variation. Total length of females 7.8 to 8.9 mm. One female had broken white streaks on the abdomen as in males (Fig. 120), and a black patch on venter with two white longitudinal bands.

Diagnosis. Females differ from *A. carminea* by having a short, wide epigynum (Fig. 116) and, in posterior view, a median plate with two dorsal lobes (Fig. 117). Males distinguished from *A. carminea* by a longer median apophysis and a long looping embolus in the palpus (Fig. 121).

Paratypes. BRAZIL *Minas Gerais*: Poços de Caldas, fall 1943. ♀ (F. Pough, AMNH). ARGENTINA *La Rioja*: Cuesta de Miranda, Jan. 1964, ♀ (M. E. Galiano, MACN). *Córdoba*: Valle Hermoso, Feb. 1958, ♀ (O. de Ferrariis, AMNH).

Alpaida carminea (Taczanowski), new combination

Figures 122–127; Map 2

Epeira carminea Taczanowski, 1878: 163, pl. 2, fig. 14. Several female syntypes from Amable María, [Dpto. Junín], Peru (PAN), examined.

Epeira deliciosa Keyserling, 1893: 234, pl. 11, fig. 174. Female, male syntypes from Serra Vermelha, Fazenda Calvaria [Est. Rio de Janeiro], Brazil (BMNH) lost. NEW SYNONYMY.

Aranea carminea:—Roewer, 1942: 838.

Aranea deliciosa:—Roewer, 1942: 841.

Araneus carmineus:—Bonnet, 1955: 452.

Araneus deliciosus:—Bonnet, 1955: 485.

Description. Female from Paraguayan Chaco. Carapace, sternum, coxae orange. Labium, endites, legs black. Dorsum of abdomen black with median longitudinal and lateral light bands (Fig. 124); venter with wide, median, longitudinal band, sides black, white under posterior point (Fig. 125). Fourth legs slightly longer than first. Abdomen oval, pointed posterior. Total length 6.7 mm. Carapace 2.7 mm long, 2.1 wide. First femur 2.3 mm; patella and tibia 2.9; metatarsus 1.9; tarsus 0.9. Second patella and tibia 2.5 mm; third 1.8; fourth 3.0.

Male. Coloration as in female (Fig. 126). Total length 5.0 mm. Carapace 2.7 mm long, 1.9 wide. First femur 2.5 mm; patella

and tibia 2.8; metatarsus 1.9; tarsus 0.9. Second patella and tibia 2.3 mm; third 1.7; fourth 2.7.

Note. Both Keyserling and Taczanowski describe the carapace as being crimson.

Variation. Total length of females from 5.0 to 9.1 mm, males from 4.9 to 5.3. Some females have a black patch on the venter of the abdomen surrounded by white.

The female described and illustrated is a syntype of *deliciosa*, the male is from Misiones, Argentina (MACN).

Diagnosis. The abdomen of the female has a characteristic color pattern (Figs. 124, 125) and the epigynum differs from related species by being slightly longer than wide in posterior view (Fig. 123) and having well-set off lateral lobes subequal to the median lobe in ventral view (Fig. 122). The male palpus has a long, slightly curved, saber-shaped embolus and very large terminal apophysis (Fig. 127).

Natural History. Kochalka's notes (in letter) say that the living spider is brilliant red and black. It is found under rocks, logs, boards and trash in disturbed habitats. The tiny web is about 5 cm above the ground out in the open or under an object. Once he observed a female on a brick wall 1.5 m above the ground, near a tangled yellowish egg-sac suspended from a horizontal silk thread.

Records. PERU *Cajamarca*: Alsur de Jaén (AMNH). *Junín*: La Merced (MNRJ); San Ramón (AMNH, MCZ). *Madre dos Dios*: Puerto Maldonado, 300 m (AMNH); Iberia, 150 m (AMNH). BRAZIL *Ama-zonas*: Manaus (MEG, MZSP, NHRM); Rio Puraquequara (MZSP); Tabatinga (MNRJ); Estrada do Marran, Rio Branco (MZSP). *Mato Grosso do Sul*: Três Lagoas (MZSP); Salobro (MNRJ). *Minas Gerais*: Carmo do Rio Claro (MNRJ); Serinha Minas Diamantina (AMNH); Diamantina (AMNH). *Rio de Janeiro*: S. Antônio do Imbé (AMNH). *São Paulo*: Rio Claro; Amparo (MZSP); Nova Europa (MZSP). *Paraná*: Serrinha (MZSP). PARAGUAY *Central*: Villeta (MCZ, MNHNP); San Lorenzo

(MCZ); Luque (MNHNP). *Paraguari*: La Colmena (MCZ). *Itapúa*: Pirapó (MNHNP, MCZ). ARGENTINA *Misiones*: [no loc.] (MACN). *La Rioja*: La Rioja (MNRJ). *Córdoba*: Calamuchita (MACN). *Buenos Aires*: La Plata (MLP).

Alpaida alvarengai new species

Figures 128–133; Map 2

Holotype. Female from Chapada dos Guimaraes, Mato Grosso, Brazil, Nov. 1963 (M. Alvarenga, AMNH). The species is named after the collector.

Description. Female. Carapace, labium, sternum, endites orange. Coxae black. Legs ringed black on orange. Dorsum of abdomen black with three white bands, light anteriorly (Fig. 130); venter black with two contrasting white patches (Fig. 131), orange anterior to genital groove. Anterior median eyes their diameter apart; posterior median eyes slightly less than their diameter apart. Fourth legs longer than first. Abdomen oval, elongate. Total length 7.7 mm. Carapace 3.0 mm long, 1.9 wide. First femur 2.1 mm; patella and tibia 2.4; metatarsus 1.9; tarsus 0.8. Second patella and tibia 2.3 mm; third 1.7; fourth 2.7.

Male. Coloration, eye structure as in female (Fig. 132). Second tibiae slightly thicker than first, distal end curved. Abdomen oval. Total length 6.5 mm. Carapace 3.1 mm long, 2.1 wide. First femur 2.5 mm; patella and tibia 3.1; metatarsus 2.1; tarsus 0.9. Second patella and tibia 2.4 mm; third 1.8; fourth 2.7.

Note. Right fourth leg of female regenerated; patella and tibia 2.0 mm. Males and female have been matched by color pattern.

Diagnosis. Females differ from *A. holmbergi* by having the notch on the epigynum anterior to the posterior edge and a narrow scape (Fig. 128). The male has an evenly curved long embolus and the median apophysis has a pointed lobe pointing toward the lateral of the palpus (Fig. 133). Both sexes have a distinct pair

of white patches on the venter of the abdomen (Fig. 131).

Paratype. BRAZIL *Pará*: Aldeia Maracacume, Rio Maracacume, 80 km E of Canindé, 22, 23 May 1963, ♂ (B. Malkin, AMNH).

Alpaida holmbergi new species

Figures 134–137; Map 2

Holotype. Female from Sierra de la Ventana, Prov. Rio de Janeiro, Argentina, 17 Dec. 1971 (M. E. Galiano, MACN no. 8494). The species is named after the first Argentinian arachnologist.

Description. Female. Carapace orange, eye region black. Clypeus, labium, sternum black. Endites, coxae black, fourth coxae orange; legs ringed black and yellow. Dorsum of abdomen black with three white bands (Fig. 136); venter with a pair of white parallel lines on black (Fig. 137). Anterior median eyes slightly more than their diameter apart; posterior median eyes 1.4 diameters apart. Abdomen almost spherical with an anterior median hump. Total length 6.0 mm. Carapace 2.5 mm long, 2.0 wide. First femur 2.0 mm; patella and tibia 2.5; metatarsus 1.6; tarsus 0.7. Second patella and tibia 2.1 mm; third 1.5; fourth 2.2.

Note. Six juvenile specimens of this species from Buenos Aires labeled *Epeira burmeisteri* Holmberg are in the Keyserling collection in the British Museum. But they do not fit Holmberg's description of adult *Epeira burmeisteri*, which is that of an *Eriophora*.

Diagnosis. Females have a dorsal abdomen pattern like *A. alvarengai* and *A. chaco* but the venter has two broken white lines (Fig. 137). The epigynum differs by having the edge of the median lobe gently curved (Fig. 134) and the posterior median

plate lobed on each side dorsally (Fig. 135), while in the other two species the median lobe is set off.

Paratypes. ARGENTINA *Neuquen*: San Martín de los Andes, 640 m, 29 Sept. 1981, 3♀ (Nielsen, Karsholt, ZMK).

Alpaida santosi new species

Figures 138, 139; Map 2

Holotype. Male from Fazenda Almada, Uruçuca, Bahia, Brazil, 27 Nov. 1977 (J. S. Santos, MCN no. 10386). The species is named after the collector.

Description. Male. Carapace orange, head dusky. Labium, endites, coxae dusky. Sternum orange. Legs orange-yellow, distal half of femora, patellae and proximal half of tibiae dusky. Dorsum of abdomen with paired and median black patches; sides with longitudinal black band (Fig. 138); venter pigmentless except spinnerets and immediate surrounding area black. Anterior median eyes 0.5 their diameter apart; posterior median eyes 0.6 their diameter apart. Total length 2.1 mm. Carapace 1.2 mm long, 1.0 wide. First femur 1.3 mm; patella and tibia 1.4; metatarsus 0.9; tarsus 0.5. Second patella and tibia 1.2 mm; third 0.9.

Diagnosis. The male differs from other *Alpaida* by the long, wide curved embolus and large folded median apophysis of the palpus (Fig. 139).

Alpaida chaco new species

Figures 140–142; Map 2

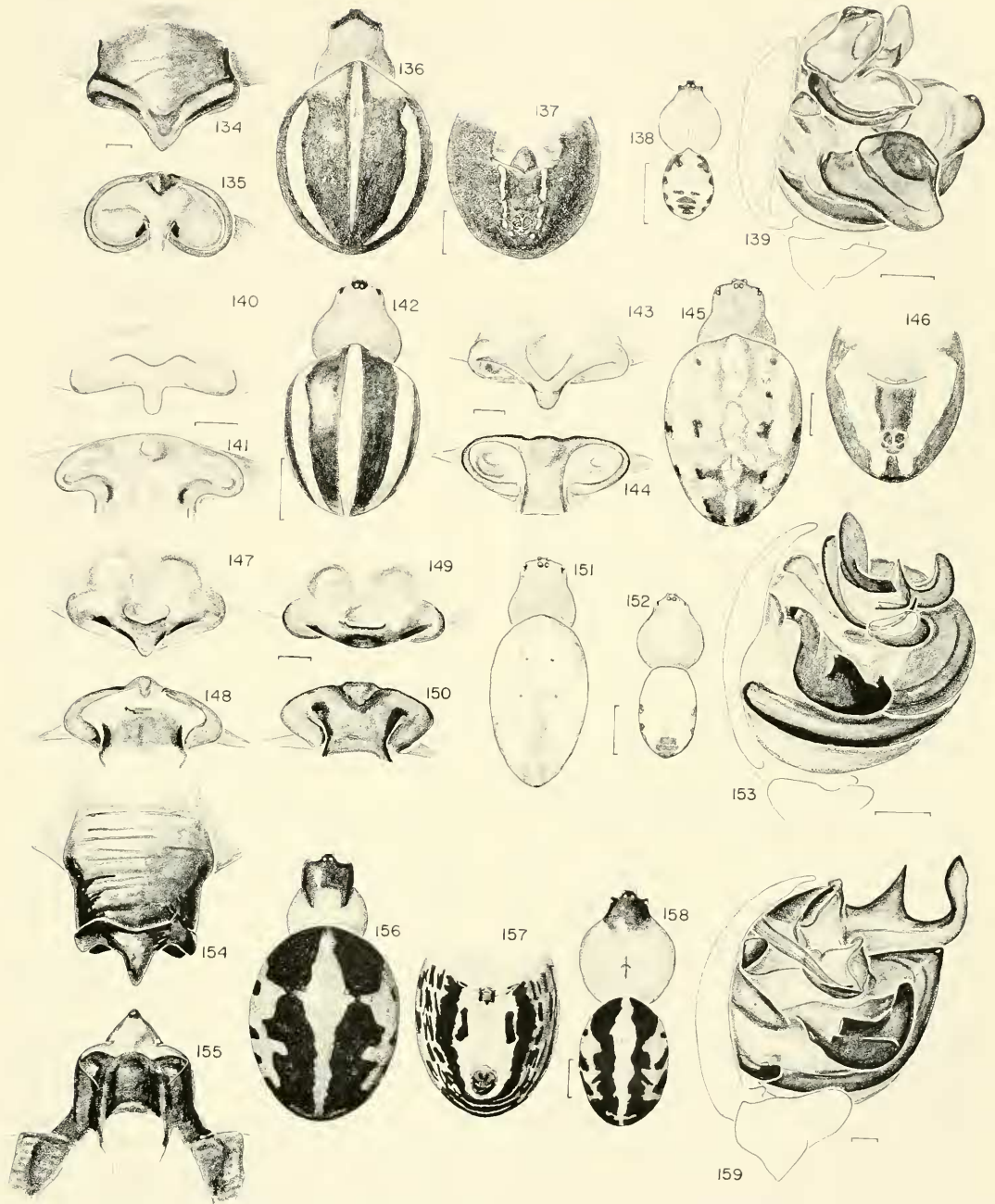
Holotype. Female from Parque Nacional Defensores del Chaco, between Picada Vieja and Cabo Cano, 68°5'W, 20°20'S, Dpto. Chaco, Paraguay, 28 Aug. 1982 (J. A. Kochalka, MNHNP). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, coxae orange. Legs with proximal

Figures 147–153. *A. dominica* n. sp. 147–152, female. 147–150, epigynum. 147, 149, ventral. 148, posterior. 149, 150, lobe torn off. 151, dorsal. 152, 153, male. 152, dorsal. 153, palpus.

Figures 154–159. *A. versicolor* (Keyserling). 154–157, female. 154, epigynum, ventral. 155, epigynum, dorsal. 156, dorsal. 157, ventral. 158, 159, male. 158, dorsal. 159, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



Figures 134-137. *Alpaيدا holmbergi* n. sp., female. 134, epigynum, ventral. 135, epigynum, posterior. 136, dorsal. 137, ventral.

Figures 138, 139. *A. santosi* n. sp., male. 138, dorsal. 139, left palpus.

Figures 140-142. *A. chaco* n. sp., female. 140, epigynum, ventral. 141, epigynum, posterior. 142, dorsal.

Figures 143-146. *A. elegantula* (Archer), female. 143, epigynum, ventral. 144, epigynum, posterior. 145, dorsal. 146, ventral.

half of femora orange, distal half and distal articles black. Dorsum of abdomen black with five white bands (Fig. 142); venter orange, spinnerets black. Eyes subequal in size. Anterior median eyes their diameter apart; posterior medians 0.4 diameter apart. Abdomen oval with a slight median anterior hump (Fig. 142). Total length 3.9 mm. Carapace 1.8 mm long, 1.5 wide. First femur 1.5 mm; patella and tibia 1.8; metatarsus 1.1; and tarsus 0.5. Second patella and tibia 1.5 mm; third 1.0; fourth 1.6.

Diagnosis. The female differs from that of *A. holmbergi* by having the posterior edge of the epigynum straight with a small set-off median lobe and the anterior edge of the lip transverse with a shallow median notch (Fig. 140).

Natural History. Kochalka (in letter) writes that the spider comes from low thorn forest with cacti, usually dry but subject to periodic flooding. It was black and yellow striped with the carapace orange when alive.

Alpaida elegantula (Archer)
Figures 143–146; Map 2

Lariniacantha elegantula Archer, 1966: 132, figs. 8, 9, ♀. Two female syntypes from Sainte Anne, Martinique, Lesser Antilles (AMNH), examined.

Alpaida elegantula:—Brignoli, 1983: 256.

Description. Female. Carapace, sternum, legs yellow. Dorsum of abdomen covered with white pigment spots overlain by two orange bands having dark spots on each side (Fig. 145); venter with median black band, with white pigment on each side having an orange cast (Fig. 146). Anterior median eyes slightly more than their diameter apart; posterior median eyes slightly less than their diameter apart. Abdomen oval [in poor, shriveled condition]. Total length 5.8 mm. Carapace 2.3 mm long, 1.8 wide. First femur 2.1 mm; patella and tibia 2.6; metatarsus 1.7; tarsus 0.8. Second patella and tibia 2.3 mm; third 1.5; fourth 2.3.

Diagnosis. The posterior median plate of the epigynum (Fig. 144) is narrower

dorsally than that of *A. dominica*, the abdomen is wider and with more distinct markings (Fig. 145).

Alpaida dominica new species
Figures 147–153; Map 2

Holotype. Female from Dominica, Lesser Antilles, 27–30 Jan. 1968 (B. Malkin, AMNH). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, legs yellow. Dorsum of abdomen whitish with dusky longitudinal streaks (Fig. 151); venter without pigment. Anterior median eyes slightly more than their diameter apart; posterior median eyes slightly less than their diameter apart. Abdomen rounded anteriorly, pointed behind, with slight shoulder humps (Fig. 151). Total length 4.9 mm. Carapace 2.0 mm long, 1.5 wide. First femur 1.8 mm; patella and tibia 2.1; metatarsus 1.4; tarsus 0.6. Second patella and tibia 1.8 mm; third 1.3; fourth 2.1.

Male. Coloration as in female, but black marks on abdomen more distinct (Fig. 152). Eyes as in female. Second tibiae only slightly thicker than first. Total length 3.4 mm. Carapace 1.5 mm long, 1.3 wide. First femur 1.7 mm; patella and tibia 1.8; metatarsus 1.2; tarsus 0.6. Second patella and tibia 1.6 mm; third 1.1; fourth 1.5.

Note. When the white exudate in the epigynum is removed, the tip breaks off and is removed with it (Figs. 149, 150). The male paratype has only a right palpus, Figure 153 is its mirror image.

Variation. Females vary in total length from 4.5 to 5.5 mm. Figures 147, 148 were made from the holotype.

Diagnosis. Females are distinguished from *A. elegantula* by the almost straight posterior edge of the notch of the epigynum (Figs. 147, 149) and the dorsally wide median posterior plate (Figs. 148, 150). The males have a distinctly shaped median apophysis, embolus and tripartite terminal apophysis (Fig. 153).

Paratypes. LESSER ANTILLES *Dominica*: Salibia, 27–30 Jan. 1968, 2♀, ♂ (B. Malkin, AMNH); Portsmouth, July 1979,

2♀ (N. L. H. Krauss, AMNH); Roseau, June 1911, ♀ (AMNH); July 1976, 3♀ (N. L. H. Krauss, AMNH, MCZ). *Montserrat*: Plymouth, Nov. 1967, ♀ (N. L. H. Krauss, AMNH). *Antigua*: St. John's, July 1979, ♀ (N. L. H. Krauss, AMNH).

Alpaida versicolor (Keyserling),
new combination

Figures 154–159; Map 3

Cercidia versicolor Keyserling, 1877: 86, pl. 3, fig. 2, ♀. Female holotype from Uruguay (BMNH), examined. Keyserling, 1892: 38, pl. 2, fig. 33, ♀, ♂. Roewer, 1942: 866.

Araneus versicolor:—Bonnet, 1955: 628.

Note. Keyserling (1877) reports on several specimens, one alleged to have come from Madagascar. This may be an error in labeling. Keyserling does not mention this specimen later in 1892 and there is only one holotype.

Description. Female. Carapace and sternum orange; head black. Chelicerae, labium, endites black. Coxae orange with proximal black patch; first two legs mostly black; last two legs broadly but indistinctly ringed black on orange. Abdomen black and light orange (Figs. 156, 157). Carapace with some scattered white hairs. Abdomen oval with some scattered white setae. Total length 7.5 mm. Carapace 3.2 mm long, 2.5 wide. First femur 2.3 mm; patella and tibia 2.9; metatarsus 1.9; tarsus 1.0. Second patella and tibia 2.5 mm; third 1.9; fourth 2.9.

Male. Coloration as in female (Fig. 158). Structure as in female, except abdomen oval. Total length 6.0 mm. Carapace 2.9 mm long, 2.5 wide. First femur 2.4 mm; patella and tibia 2.7; metatarsus 2.0; tarsus 1.0. Second patella and tibia 2.4 mm; third 1.9; fourth 2.7.

Variation. Total length of female varies from 5.6 to 9.1 mm, males from 4.9 to 5.8. The descriptions and illustrations are of specimens from Argentina (MCZ).

Diagnosis. Females, like those of *A. carminea*, have the epigynum in posterior view as long as wide (Fig. 155), but differ in having a distinct transverse lip in ventral

view and lack the notch on the median lobe (Fig. 154). The male differs from *A. carminea* by having a shorter thicker embolus in the palpus, a distal lobe on the median apophysis, and the two tips of the terminal apophysis longer (Fig. 159).

Natural History. In two records from Argentina, this species was collected in a pasture.

Records. BRAZIL *Rio Grande do Sul*: Gramado (MCN 1560); Júlio de Castiehos (MCN); Torres (MCN); Porto Alegre (MCN); Capão da Canoa (MACN). URUGUAY *Montevideo*: Montevideo (MNRJ, MZK). *Artigas*: Arroyo Cuaro (MHNM); Tres Cruces (MHNM). PARAGUAY *Guairá*: Colonia Independencia (MNHNP). BOLIVIA *Potosí*: 45 km W Ravelo (AMNH). ARGENTINA *Misiones*: Pto. Casado Chaco Papaguayo (MACN). *Salta*: Pampa Grande (AMNH, MCZ). *Chaco*: Roque Sáenz Peña (MACN, MLP). *Santiago del Estero*: Santiago del Estero (MNRJ); Sumampa (MLP); 70 km W Santiago (MCZ). *Tucumán*: Tafí del Valle, 2,000 m (MCZ). *La Rioja*: Patquía (MEG). *Mendoza*: [?] Canigal (MACN). *Santa Fé*: Delta de Paraná Río Caraguatay (MACN); Santa Fé, Rosario (ZMK); Cruz Alta (ZMK); Carcarañá (MLP). *Entre Ríos*: Paranacito (MACN); San Feliciano (MACN); Concepción del Uruguay (MLP). *San Luis*: San Luis (MLP). *Córdoba*: Calamuchica (MACN); Agua de Oro (MACN); Bajo Grande (MLP); Jesús María (MLP); Córdoba (MCZ); Manfredi (MCZ); Nono (MCZ). *Buenos Aires*: Buenos Aires (MACN, ZMK); Paraná de las Palmas (MEG); Boulogne (MLP); Haedo (MLP); Arrecifes (MLP); Rojas (MNRJ). *La Pampa*: Realico (MACN). *Río Negro*: Viedma (MACN).

Alpaida vanzolinii new species

Figures 160–165; Map 3

Holotype. Female from Caraguatutaba (Massaguacu), Est. São Paulo, Brazil, 14 July 1964, ♀ (Expedition Dept. Zool., MZSP no. 6214). The species is named after P. Vanzolini, the director of the São Paulo museum.

Description. Female. Carapace dusky orange. Sternum orange. Legs dusky orange. Dorsum of abdomen with indistinct median and paired dusky patches, posterior tip black, lateral white patches connect anteriorly by a white line (Figs. 162, 163) venter without marks, spinnerets black. Posterior median eyes twice the diameter of others. Anterior median eyes their diameter apart; posterior median eyes slightly less than their diameter apart. Legs with many macrosetae; abdomen elongate (Figs. 162, 163). Total length 5.5 mm. Carapace 1.8 mm long, 1.6 wide. First femur 2.4 mm; patella and tibia 2.5; metatarsus 1.9; tarsus 0.8. Second patella and tibia 2.1 mm; third 1.3; fourth 2.5.

Male. Carapace yellow with thin median dusky line, otherwise color as in female (Fig. 164). Posterior median eyes 1.5 times diameter of others. Second tibiae thicker than first and with macrosetae. Fourth trochanters and fourth coxae each with a short macroseta. Total length 3.8 mm. Carapace 1.6 mm long, 1.4 wide. First femur 2.2 mm; patella and tibia 2.5; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.6 mm; third 1.2; fourth 2.0.

Variation. Females vary in total length from 5.1 to 5.5 mm. The female holotype and the male from Peru are described and illustrated.

Diagnosis. The female can be separated from other species with an elongate oval abdomen lacking an anterior median hump by the epigynum which has a much longer posterior median plate (Fig. 161) than that of *A. morro* and *A. montecarlo*. The male has a sickle-shaped embolus below a large sclerotized terminal apophysis (Fig. 165).

Paratypes. PERU *Huánuco*: Monzón Valley, Tingo María, 10 Nov. 1954, ♀ (E. S. Ross, E. I. Schlinger, CAS); Tingo María, 10 Jan. 1947, ♂ (J. Pallister, AMNH). BRAZIL *Amazonas*: Fonte Boa, Sept. 1975, 3♂ (M. Oliveira, AMNH, MCZ). ARGENTINA *Misiones*: Eldorado, 1964, 3♀ (A. Kovacs, AMNH).

Alpaida morro new species
Figures 166–169; Map 3

Holotype. Female from Santa Isabel do Morro, Ilha do Bananal, Goiás, Brazil, June 1961 (M. Alvarenga, AMNH). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellowish orange with a median dusky longitudinal patch and dusky line on thoracic edge. Sternum, legs yellow-orange. Dorsum of abdomen white with paired dusky to black patches (Fig. 168); sides with a black and dusky line bordered above by the dorsal white; venter with a longitudinal dusky rectangle on gray, spinnerets black (Fig. 169). Anterior median eyes and posterior medians each their diameter apart. Abdomen rounded in front and behind. Total length 4.3 mm. Carapace 1.5 mm long, 1.2 wide. First femur 1.5 mm; patella and tibia 1.7; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.6 mm; third 1.0; fourth 1.6.

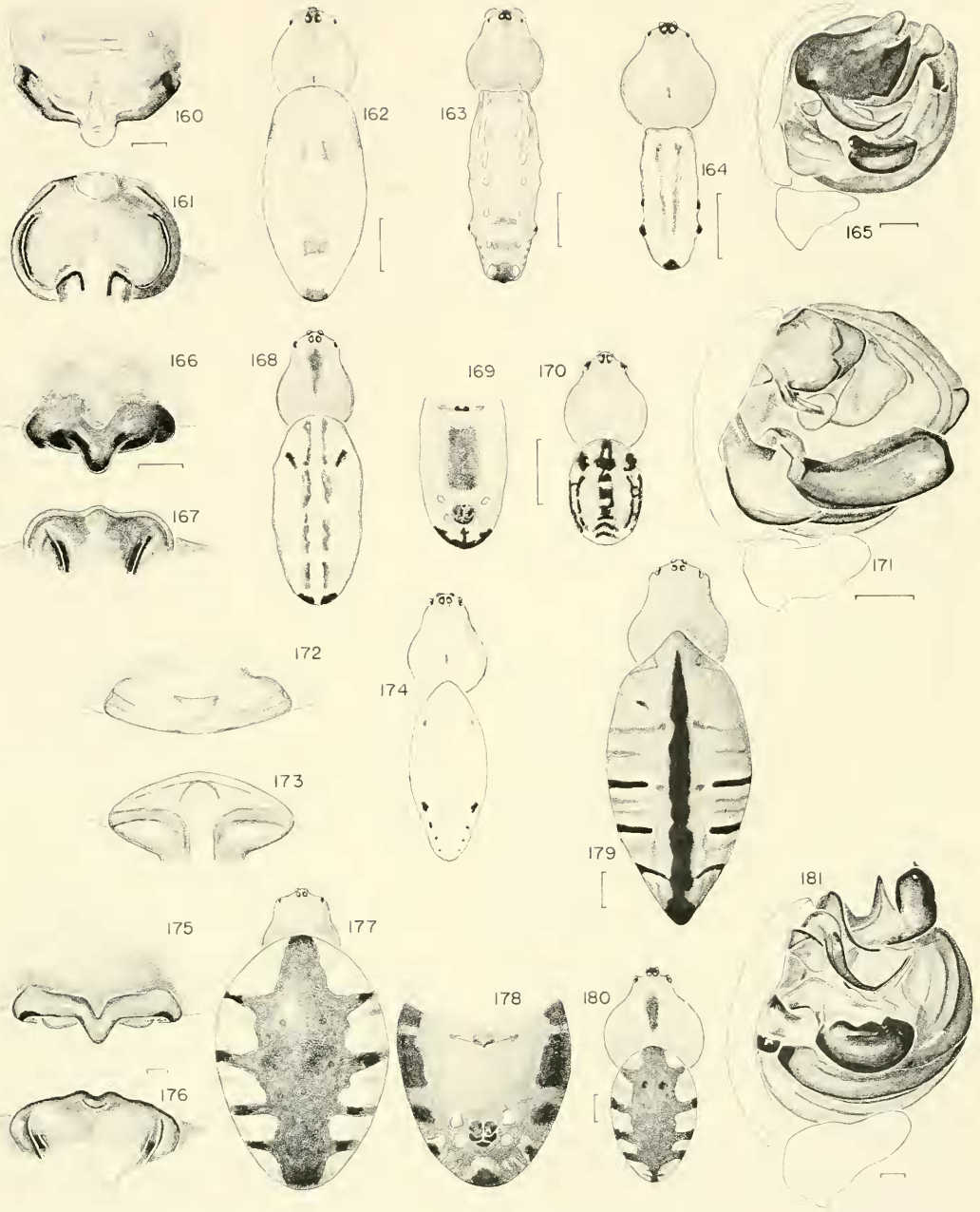
Diagnosis. This female is distinguished from *A. vanzolinii* by the distinct notch in the epigynum (Fig. 166) and, in posterior view, by the dorso-ventrally shorter median plate (Fig. 167).

Alpaida lanei new species
Figures 170, 171; Map 3

Holotype. Male from Honto Florestal, Capital, São Paulo, Brazil, 2 Dec. 1943 (F. Lane, MZSP no. 4547). The species is named after the collector.

Description. Male. Carapace, sternum, coxae yellow. Legs yellowish, distal articles with indistinct dusky rings. Dorsum of abdomen with three longitudinal black bands each enclosing some white pigment spots; venter with a few widely scattered white pigment spots. Total length 2.9 mm. Carapace 1.5 mm long, 1.2 wide. First femur 1.5 mm; patella and tibia 1.7; metatarsus 0.9; tarsus 0.5. Second patella and tibia 1.3 mm; third 0.9; fourth 1.3.

Variation. Total length of males varies from 2.8 to 2.9 mm. The median dorsal



Figures 160–165. *Alpaida vanzolinii* n. sp. 160–163, female. 160, epigynum, ventral. 161, epigynum, posterior. 162, 163, dorsal. 162, (São Paulo, Brazil). 163, (Prov. Misiones, Argentina). 164, 165, male. 164, dorsal. 165, left palpus.

Figures 166–169. *A. morro* n. sp., female. 166, epigynum, ventral. 167, epigynum, posterior. 168, dorsal. 169, ventral.

Figures 170, 171. *A. lanei* n. sp., male. 170, dorsal. 171, palpus.

Figures 172–174. *A. montecarlo* n. sp., female. 172, epigynum, ventral. 173, epigynum, posterior. 174, dorsal.

Figures 175–181. *Alpaida latro* (Fabricius). 175–178, female. 175, epigynum, ventral. 176, epigynum, dorsal. 177, dorsal. 178, ventral. 179, immature. 180, 181, male. 180, dorsal. 181, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

area of the abdomen lacks marks in the paratype.

The male holotype is described and illustrated.

Diagnosis. The male is separated from others by the long rectangular median apophysis with a lobe directed toward the cymbium and the squarish terminal apophysis of the palpus (Fig. 171).

Paratype. ARGENTINA *Misiones*: Gral. Manuel Belgrano, Jan. 1966, ♂ (M. E. Galiano, MACN 8449).

Alpaida montecarlo new species

Figures 172–174; Map 3

Holotype. Female from Montecarlo, Prov. Misiones, Argentina, Jan. 1966 (M. E. Galiano, MACN no. 8473). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellowish. Sternum, legs yellow. Dorsum of abdomen white with pairs of black spots (Fig. 174); venter yellowish. Posterior median eyes 1.8 diameters; anterior laterals and posterior laterals 0.8 diameter of anterior median eyes. Anterior median eyes 1.6 diameters apart, 1.5 diameters from laterals. Posterior median eyes slightly less than their diameter apart, 1.3 diameters from laterals. Second legs longer than fourth. Abdomen elongate (Fig. 174). Total length 4.0 mm. Carapace 1.6 mm long, 1.3 wide. First femur 2.1 mm; patella and tibia 2.9; metatarsus 2.4; tarsus 0.9. Second patella and tibia 2.5 mm; third 1.3; fourth 2.3.

Variation. Females vary in total length from 4.0 to 4.9 mm.

Diagnosis. The female is distinguished from *A. morro* and *A. vanzolinii* by the absence of a posterior median lobe on the epigynum and by the straight posterior edge of the notch (Fig. 172). The lobe might have been torn off when mating.

Note. The generic placement is doubtful. It has a narrower head than other species.

Paratype. ARGENTINA *Río Negro*: El Bolsón area, 1965–1966, ♀ (A. Kovacs, AMNH).

Alpaida latro (Fabricius), new combination

Figures 175–181; Map 3

Aranea latro Fabricius, 1793: 412. Specimen from America (ZMK), lost. Roewer, 1942: 845.

Epeira latro:—Walckenaer, 1841: 113. Keyserling, 1878: 574, pl. 14, fig. 3, ♀. 1892: 197, pl. 9, fig. 146, ♀.

Miranda latro:—C. L. Koch, 1845: 158, fig. 933.

Lariniacantha latro:—Archer, 1951: 15.

Araneus latro:—Bonnet, 1955: 527.

Note. This species was first illustrated by C. L. Koch. I am following Koch and Keyserling in using the name *latro* for this species.

Description. Female. Carapace, sternum, coxae orange. Legs black. Dorsum of abdomen black with lateral light patches enclosing dark transverse stripes (Fig. 177); venter orange; spinnerets, black. Abdomen elongate to oval. Total length 10.5 mm. Carapace 3.7 mm long, 2.8 wide. First femur 3.7 mm; patella and tibia 4.3; metatarsus 3.1; tarsus 1.2. Second patella and tibia 3.6 mm; third 2.5; fourth 4.0.

Male. Coloration as in female (Fig. 180). Second tibiae thicker and with macrosetae. Abdomen oval. Total length 8.7 mm. Carapace 4.4 mm long, 3.6 wide. First femur 4.3 mm; patella and tibia 5.0; metatarsus 3.4; tarsus 1.4. Second patella and tibia 3.9 mm; third 2.7; fourth 4.0.

Variation. The eyes may be on black spots, the carapace may have a black patch (Fig. 180) and there may be more black on the venter. Some females have only the midline of the abdomen black (Fig. 179). Total length of females varies from 8.4 to 12.1 mm, males from 7.5 to 8.3.

The illustrations of the epigynum and Figure 179 are from a specimen from Paraguay (MCZ); Figures 177, 178 from a specimen from Goiás and illustrations of the male from a specimen from Montevideo (MHNM).

Diagnosis. Both males and females are most easily recognized by the unique color markings and shape of the abdomen (Figs. 177–180).

Records. BRAZIL *Pará:* Conceição do Araguaia, July 1959, ♀ (Alvarenga, AMNH). *Goiás:* Corumbá Monjolinha, 6 June 1942, 2 imm. (F. Hana, MZSP 7292); Jaraguá, 12 June 1942, 4♀, 2♂ (F. Lane, MZSP 5159). *São Paulo:* Itapetininga, 13 Sept. 1967, ♂ (E. X. Rabello, MZSP 6823); Ipiranga, imm. (MZSP 7461). *Paraná:* Rio Papagaio Campo Largo, Mar. 1949, ♀ (Gofferge, MZSP 6574). *Rio Grande do Sul:* Bossoroca, 15 Feb. 1972, ♀ (P. C. Braum, MCN); Porto Alegre, 15 Aug. 1968, ♀ (A. A. Lise, MCN), ♀ (R. Buck, MNRJ); Pelotas, Jan. 1958, ♀ (C. Biezanko, AMNH). URUGUAY *Montevideo:* Montevideo, Jan. 1958, 7♀, 2♂ (R. M. Capocasale, MHNM); Malvin, 13 Mar. 1964, ♀ (F. Achaval, MHNM); Puerto Buceo, 21 July 1962, ♀ (R. Capocasale, MHNM); Manga, 3 Nov. 1963, imm. (F. Achaval, MHNM); Isla Buchental, Río Uruguay, 9 Oct. 1963, 2♀ (R. Capocasale, MHNM). *Florida:* Casupa, 4 Dec. 1973, 3♀, ♂ (R. Capocasale, MHNM). *Maldonado:* Piriapolis, 28 June 1953, 2♀, ♂ (Barreiro, MHNM). *Rocha:* La Pedrera, Dec. 1974, ♀ (F. Costa, MHNM). ARGENTINA *Formosa:* Palo Santo, ♀ (H. Hepper, MACN).

Alpaida alticeps (Keyserling),
new combination

Figures 182–187; Map 3

Epeira alticeps Keyserling, 1880: 311, pl. 4, fig. 13, ♀. Female holotype from Nova Friburgo, Est. Rio de Janeiro, Brazil (BMNH), examined.

Epeira undulata Bertkau, 1880: 89, pl. 2, fig. 32, ♀. Ten ♀, 3♂ syntypes from Copa Cabana [Rio de Janeiro], Brazil (ZMH), not examined.

Epeira göldii Karsch, 1886: 92, pl. 3, fig. 9, ♀, ♂. Three female, two male, one juv., syntypes from Rio de Janeiro, Brazil (ZMB), examined.

Aranus carteri Badcock, 1932: 25. Penultimate female, penultimate male from Corcovado, Rio de Janeiro, Brazil (BMNH), examined. Bonnet, 1955: 452. NEW SYNONYMY.

Aranca carteri:—Roewer, 1942: 838.

Verrucosa alticeps:—Roewer, 1942: 879.

Aranus alticeps:—Bonnet, 1955: 432.

Description. Female from Rio de Janeiro. Carapace, orange brown with white setae on head. Sternum, coxae orange. Legs

contrastingly ringed black on orange. Dorsum of abdomen with paired black patches (Fig. 184); venter with median black patch surrounded by white (Fig. 185). Abdomen with three pairs lateral humps, hairs on sides (Fig. 184). Total length 14.0 mm. Carapace 5.5 mm long, 4.4 wide. First femur 4.7 mm; patella and tibia 6.2; metatarsus 3.8; tarsus 1.5. Second patella and tibia 5.4 mm; third 3.5; fourth 5.4.

Male from Bahia. Color as in female, venter of abdomen all black. Carapace glabrous. Abdomen as in female, but muscle attachment discs sclerotized (Fig. 186). Total length 10.3 mm. Carapace 5.0 mm long, 4.0 wide. First femur 5.1 mm; patella and tibia 6.2; metatarsus 3.6; tarsus 1.6. Second patella and tibia 4.8 mm; third 3.2; fourth 5.0.

Variation. Females vary in length from 8.8 to 17.5 mm, males from 8.2 to 10.7. The size of the lateral humps on the female abdomen varies from barely discernable to distinct humps.

The description and illustrations are of a female from Rio de Janeiro (MCZ) and a male from Bahia (MCN).

Diagnosis. Both sexes can be distinguished from most species of *Alpaida* by the hairs in the head region and on the sides of the abdomen (Figs. 184, 186). The V formed by the smooth lips of the epigynum is more obtuse (Fig. 182) than that of *A. scriba*. The male is distinguished by a long median apophysis, pointed on each end, and the nearly round outline of the terminal apophysis (Fig. 187).

Records. BRAZIL *Bahia:* Itamaraju, 7 Aug. 1978, ♂ (J. S. Santos, MCN). *Minas Gerais:* Santa Rita de Caldas, July 1953, ♀ (MZSP 7653); Rio Matipóó, Aug. 1919, ♀ (MZSP 5771); Serinha Minas Diamantina, ♀ (AMNH). *Rio de Janeiro:* Camorim, ♀ (MNRJ). *São Paulo:* Mogi das Cruzes, 1945, ♀ (MZSP 7931). *Rio Grande do Sul:* Montenegro, 3 Nov. 1977, 3♀ (MCN 7113); General Câmara, 14 Oct. 1982, ♂ (MCN 10805); Tarumã, Viamão, 5 Jan. 1977, ♀ (MCN 5682).

Alpaida scriba (Mello-Leitão),

new combination

Figures 188–190; Map 3

Drexilia scriba Mello-Leitão, 1940: 203. Female holotype from Colatina, Espírito Santo, Brazil (MNRJ no. 58296), examined. Brignoli, 1983: 268.

Description. Female. Carapace, sternum, coxae yellow. Legs yellow with indistinct dusky patches. Dorsum of abdomen with indistinct pairs of dusky streaks, posterior tip black, white pigment on anterior quarter, posterior quarter, and along midline; venter without pigment, spinnerets black. Posterior median eyes 0.8, laterals 0.6 diameter of anterior medians. Anterior median eyes 0.8, laterals 0.6 diameter of anterior medians. Anterior median eyes slightly less than and posterior median their diameter apart. Abdomen with indistinct shoulder humps, posterior tip round, sides bulging slightly. Total length 8.5 mm. Carapace 3.4 mm long, 2.7 wide. First femur 3.0 mm; patella and tibia 3.9; metatarsus 2.3; tarsus 1.1. Second patella and tibia 3.2 mm; third 1.9; fourth 3.3

Diagnosis. Females are distinguished from those of *A. alticeps* by the lack of setae on the head and sides of the abdomen, and by the lips of the epigynum, which form a more acutely angled V (Fig. 188).

Records. BRAZIL *São Paulo*: Bateia, 2 Nov. 1949, ♀ (F. Lane, MZSP 6861).

Alpaida kochalkai new species

Figures 191–193; Map 3

Holotype. Female from Loma Cebolleta, ridge trail, 2,500 m, Sierra Nevada de Santa Marta, Dpto. Mag-

dalena, Colombia, 1 March 1975 (J. Kochalka, MCZ). The species is named after the collector.

Description. Female. Carapace, sternum, legs yellow. Dorsum of abdomen greenish white, white pigment spots and four pairs of indistinct tiny black spots (Fig. 193); venter without pigment. Secondary eyes 1.2 diameters of anterior medians. Anterior median eyes 1.3 their diameter apart; posterior median eyes 1.2 their diameter apart. Abdomen oval, pointed behind, indistinctly scalloped on sides (Fig. 193). Total length 5.2 mm. Carapace 1.9 mm long, 1.6 wide. First femur 1.9 mm; patella and tibia 2.2; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.8; third 1.1; fourth 1.9.

Diagnosis. The epigynum is longer and less sclerotized (Figs. 191, 192) than that of *A. variabilis* and its posterior plate is wider distally than at its base (Fig. 192).

Alpaida iquitos new species

Figures 194–197; Map 3

Holotype. Female holotype and one female paratype from Iquitos, Peru, May 1920 (W. S. Parrish, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, legs orange. Coxae, lighter orange. Dorsum of abdomen with white pigment, posterior tip black (Figs. 196, 197); venter colorless, marked with an indistinct, dusky square; black posterior to spinnerets. Abdomen elongate, widest anterior (Figs. 196, 197). Total length 5.5 mm. Carapace 2.1 mm long, 1.6 wide. First femur 1.9 mm; patella and tibia 2.3; metatarsus 1.5; tarsus

Figures 182–187. *Alpaida alticeps* (Keyserling). 182–185, female. 182, epigynum, ventral. 183, epigynum, posterior. 184, dorsal. 185, ventral. 186, 187, male. 186, dorsal. 187, left palpus.

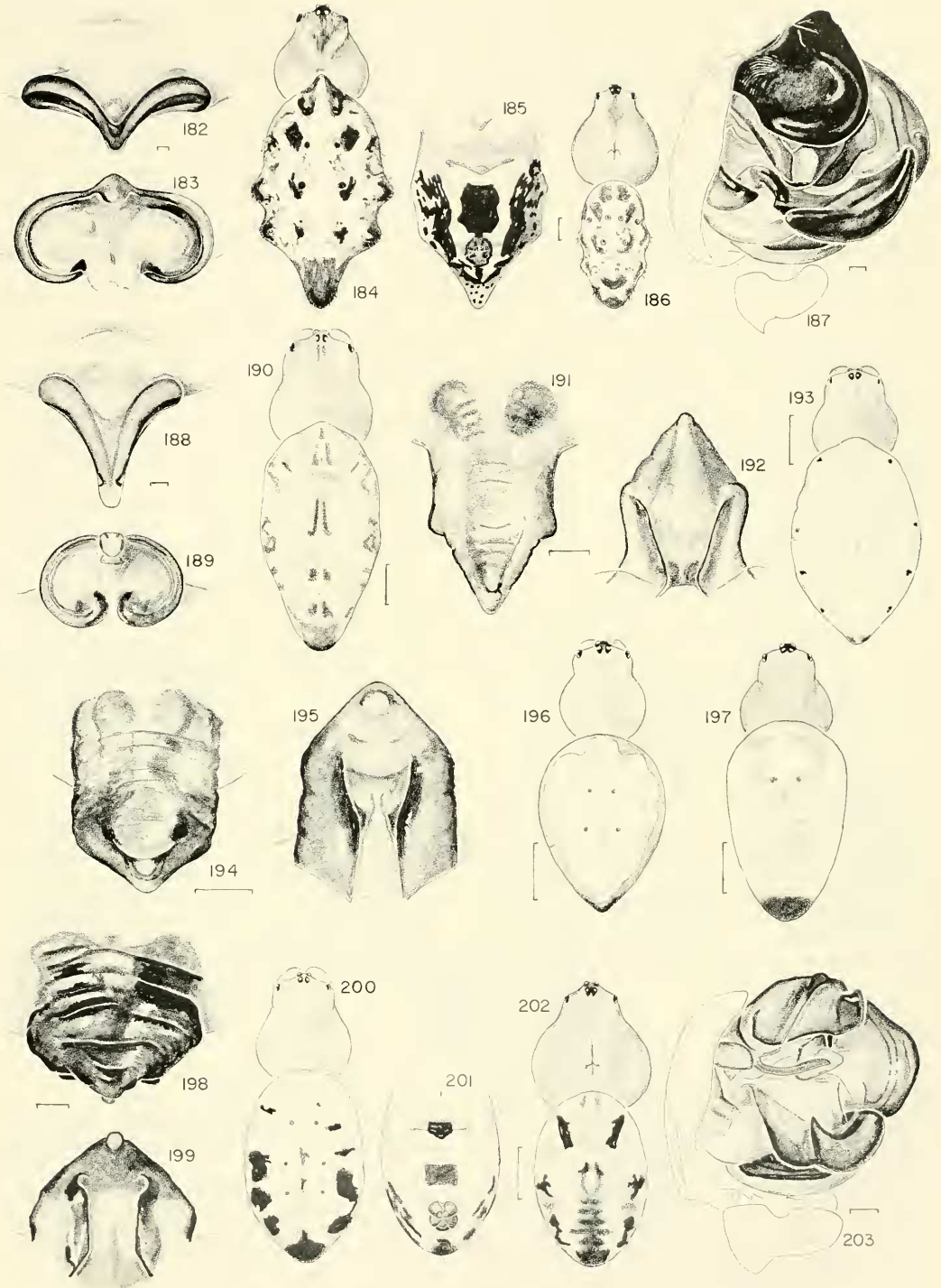
Figures 188–190. *A. scriba* (Mello-Leitão), female. 188, epigynum, ventral. 189, epigynum, posterior. 190, dorsal.

Figures 191–193. *A. kochalkai* n. sp., female. 191, epigynum, ventral. 192, epigynum, posterior. 193, dorsal.

Figures 194–197. *A. iquitos* n. sp., female. 194, epigynum, ventral. 195, epigynum, posterior. 196, 197, dorsal. 196, (Ecuador). 197, (Peru).

Figures 198–203. *A. variabilis* (Keyserling). 198–201, female. 198, epigynum, ventral. 199, epigynum, posterior. 200, dorsal. 201, ventral. 202, 203, male. 202, dorsal. 203, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



0.8. Second patella and tibia 1.9 mm; third 1.2; fourth 1.8.

Variation. Females vary in total length from 4.1 to 5.5 mm. The holotype is illustrated and described.

Diagnosis. Females differ from *A. variabilis* and *A. kochalkai* by having the posterior plate of the epigynum constricted in the middle (Fig. 195) and from *A. variabilis* by having the epigynum longer (Figs. 194, 195).

Paratypes. ECUADOR *Napo*: Río Napo, 2 Jan. 1972, ♀ (Bordon, MACN 8458). BRAZIL *Pará*: Aldeia Coraci 12 km W of Canindé, 16–26 Apr. 1963, ♀ (B. Malkin, AMNH); Canindé, Rio Gurupi, 7–15 Apr. 1963, 7♀ (B. Malkin, AMNH, MCZ, MZSP). *Mato Grosso*: Chapada dos Guimarães, Nov. 1963, ♀ (M. Alvarenga, AMNH).

Alpaida variabilis (Keyserling),
new combination

Figures 198–203; Map 3

Araneus variabilis Keyserling, 1864: 126, pl. 6, figs. 1–4, ♀. Several female syntypes from Santa Fé de Bogota, [Bogotá], Colombia (BMNH), examined; 1893: 249, pl. 12, fig. 185, ♀, ♂.

Aranea variabilis:—Roewer, 1942: 855.

Araneus variabilis:—Bonnet, 1955: 627.

Description. Female. Carapace, sternum, legs yellowish. Dorsum of abdomen white with paired black patches, posterior tip black, median area lacking pigment (Fig. 200); posterior half of sides with black marks; venter with a median square black patch (Fig. 201). Abdomen elongate oval. Total length 5.6 mm. Carapace 2.5 mm

long, 1.8 wide. First femur 2.0 mm; patella and tibia 2.4; metatarsus 1.5; tarsus 0.7. Second patella and tibia 2.0 mm; third 1.4; fourth 2.0.

Male. Coloration as in female (Fig. 202). Second tibia as thick as first with macrosetae. Abdomen oval. Total length 5.4 mm. Carapace 2.5 mm long, 2.1 wide. First femur 2.3 mm; patella and tibia 2.6; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.9 mm; third 1.3; fourth 2.0.

Note. A female from Gosomoco (MCZ) and a male from Bogotá (BMNH) are illustrated and described.

Diagnosis. Females differ from *A. kochalkai* and *A. iquitos* by having a more sclerotized, wider epigynum (Figs. 198, 199), with a posterior median plate whose borders are parallel (Fig. 199). The male has a distinctive pointed lobe in the center of the median apophysis and a large, folded over terminal apophysis (Fig. 203).

Records. COLOMBIA Bogotá, 8♂ (BMNH); 16 km W. Bogotá, ♀ (E. I. Schlinger, E. S. Ross, CAS). *Cundinamarca*: Gosomoco [Quebrada Susumuco] 2♀ (E. Reimoser, MCZ).

Alpaida citrina (Keyserling),
new combination

Figures 204–206; Map 3

Epeira citrina Keyserling, 1892: 88, pl. 4, fig. 66, ♀.

Three female syntypes from Serra Vermelha, Est. Rio de Janeiro, Brazil (BMNH), examined.

Aranea citrinella Roewer, 1942: 839. New name for *Epeira citrina*, since name thought preoccupied by *Aranea citrina* Fourcroy.

Araneus citrinus:—Bonnet, 1955: 461.

Figures 204–206. *Alpaida citrina* (Simon), female. 204, epigynum, ventral. 205, epigynum, posterior. 206, dorsal.

Figures 207–209. *A. sandrei* (Simon), female. 207, epigynum, ventral. 208, epigynum, posterior. 209, dorsal.

Figures 210–215. *A. manicata* (Simon). 210–213, female. 210, epigynum, ventral. 211, epigynum, posterior. 212, dorsal. 213, lateral. 214, 215, male. 214, dorsal. 215, left palpus.

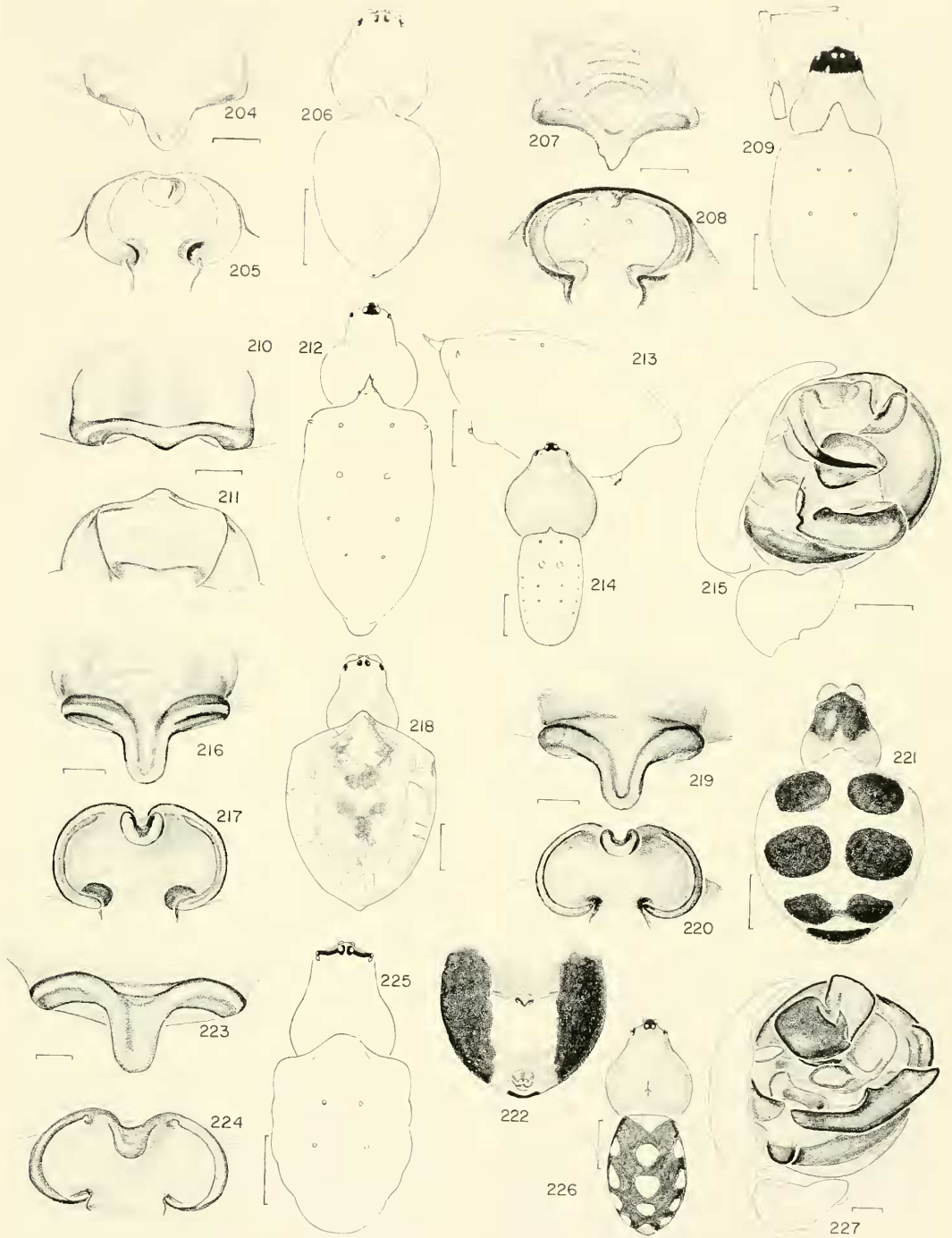
Figures 216–218. *A. canela* n. sp., female. 216, epigynum, ventral. 217, epigynum, posterior. 218, dorsal.

Figures 219–222. *A. lomba* n. sp., female. 219, epigynum, ventral. 220, epigynum, posterior. 221, dorsal. 222, ventral.

Figures 223–225. *A. nigrofrenata* (Simon), female. 223, epigynum, ventral. 224, epigynum, posterior. 225, dorsal.

Figures 226, 227. *A. natal* n. sp., male. 226, dorsal. 227, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



Description. Female. Carapace, sternum yellowish white. Legs yellowish white, with indistinct black rings on distal ends of articles. Dorsum of abdomen white with some dusky pigment posterior; sides white; venter with scattered white pigment spots. Eyes small. Anterior median eyes 1.2 diameters apart; posterior median eyes 1.6 diameters apart. Abdomen with a large anterior median hump (Fig. 206). Total length 3.6 mm. Carapace 1.5 mm long, 1.3 wide. First femur 1.6 mm; patella and tibia 1.7; metatarsus 0.9; tarsus 0.5. Second patella and tibia 1.5 mm; third 1.0; fourth 1.4.

Variation. One syntype is 3.4 mm, the other 4.2 in total length; both have three pairs of lateral humps. The total length of other females is intermediate.

A specimen from Rio Grande do Sul is illustrated and described (MCN).

Diagnosis. The shape of the abdomen (Fig. 206), the straight posterior edge of the epigynum (Fig. 204) and the wide lips on each side of the posterior median plate (Fig. 205) separate the species from *A. sandrei*.

Records. BRAZIL *Rio Grande do Sul*: Vila Oliva, Caxias do Sul, 5 Jan. 1976, ♀ (P. A. Buckup, MCN 3944); Linha Alegre, Arroio do Meio, 9 Jan. 1985, ♀ (A. A. Lise, MCN 12901).

Alpaida sandrei (Simon),
new combination

Figures 207–209; Map 3

Araneus sandrei Simon, 1895: 816. Female lectotype here designated from Caraça, Minas Gerais, Brazil (MNHN no. 8366), examined. Bonnet, 1955: 589. *Aranea sandrei*:—Roewer, 1942: 851.

Note. One paralectotype is similar but has eyes farther apart and the abdomen is shorter; it may be the same species.

Description. Female. Carapace orange, anterior third, including clypeus, black. Chelicerae, sternum, coxae, legs orange. Abdomen orange-white. Anterior median eyes and posterior median eyes 1.3 diameters apart. Abdomen longer than wide, soft with an anterior median projection

(Fig. 209). Total length 4.5 mm. Carapace 1.9 mm long, 1.5 wide. First femur 1.6 mm; patella and tibia 1.8; metatarsus 1.2; tarsus 0.6. Second patella and tibia 1.7 mm; third 1.1; fourth 1.6.

Diagnosis. Females are distinguished from those of other species with an anterior median hump on the abdomen by the black head (Fig. 209) and the pointed lobe of the epigynum (Fig. 207).

Alpaida manicata new species
Figures 210–215; Map 3

Araneus manicatus Simon, 1895: 822. Nomen nudum. Bonnet, 1955: 533.

Aranea manicata:—Roewer, 1942: 846.

Holotype. Female from Rio Tocantins [Pará, Brazil] (MNHN no. 606). The specimen had been labeled *manicatus* by Simon.

Note. A juvenile from Tovar labeled *A. manicatus* [Minas Gerais, Brazil] (MNHN 10202) is not this species.

Description. Female. Carapace, sternum, coxae yellow-white. Femora of legs yellow-white, distal articles brownish-black; some articles yellowish-white proximally. Abdomen yellowish-white. Carapace with median eye region projecting. Posterior median eyes 1.2 diameters of anterior medians, laterals about the radius of anterior medians in diameter. Anterior median eyes one diameter apart, posterior medians 1.5 diameters apart. Abdomen longer than wide with an anterior median spine and a pair of small anterior lateral spines (Figs. 212, 213). Total length 5.5 mm. Carapace 1.9 mm long, 1.8 wide. First femur 1.7 mm; patella and tibia 2.0; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.8 mm; third 1.2; fourth 1.8.

Male. Coloration as in female. Eye sizes as in female. Anterior median eyes slightly less than their diameter apart; posterior median eyes their diameter apart. Second tibiae slightly thicker than first with macrosetae. Abdomen oval with a tiny median anterior spine (Fig. 214). Total length 3.1 mm. Carapace 1.6 mm long, 1.4 wide. First femur 1.7 mm; patella and tibia 1.8; meta-

tarsus 1.1; tarsus 0.5. Second patella and tibia 1.4 mm; third 1.1; fourth 1.5.

Note. Males and females were matched because of the anterior spine on the abdomen.

Variation. Females vary in total length from 5.5 to 6.1 mm. Females from Canindé vicinity lack the lateral dorsal spines on the abdomen and have wider abdomens.

The holotype and the male from Canindé (AMNH) are illustrated and described.

Diagnosis. Females differ from *A. citrina* by having the lips of the epigynum in a straight line and only a faint indication of a median lobe (Fig. 210). Males differ from *A. lanei* and others by having an anterior median spine on the abdomen (Fig. 214) and a longer embolus and terminal apophysis (Fig. 215).

Paratypes. BRAZIL *Pará:* 59 km E Canindé, May 1963, ♀ (B. Malkin, AMNH); Canindé, April 1963, ♂ (B. Malkin, AMNH).

Alpaida canela new species
Figures 216–218; Map 3

Holotype. Female holotype and one female paratype from Canela, Rio Grande do Sul, Brazil, 31 Dec. 1973 (A. A. Lise, MCN no. 2055). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, legs light orange. Dorsum of abdomen with white patches all around, some black pigment in middle (Fig. 218); sides white; venter yellowish gray, lacking pigment. Anterior median eyes their diameter apart; posterior median eyes slightly more than their diameter apart. Abdomen shield-shaped with anterior median hump (Fig. 218). Total length 5.5 mm. Carapace 1.8 mm long, 1.4 wide. First femur 1.7 mm; patella and tibia 2.1; metatarsus 1.2; tarsus 0.6. Second patella and tibia 1.8 mm; third 1.1; fourth 1.7.

Diagnosis. Unlike most *Alpaida* the lobe of the epigynum has a deep median groove (Figs. 216, 217). The females differ from *A. lomba* by lacking the contrasting color markings.

Alpaida lomba new species
Figures 219–222; Map 3

Holotype. Female from Morro dos Bois, Lomba Grande, Novo Hamburgo, Rio Grande do Sul, Brazil, 27 Nov. 1980 (A. A. Lise, MCN no. 9418). The specific name is a noun in apposition after the locality.

Description. Female. Carapace light orange, head black. Chelicerae, labium, endites, sternum, palpi, coxae light orange. Femora, patellae, tibiae black; metatarsi, tarsi ringed black on light orange. Dorsum of abdomen white with three pairs of black patches and three posterior black bars (Fig. 221); sides black; venter white between epigynum and spinnerets (Fig. 222). Anterior median eyes 1.4 diameters apart; posterior median eyes slightly more than one diameter apart. Abdomen shield-shaped with anterior median hump. Total length 4.7 mm. Carapace 1.8 mm long, 1.4 wide. First femur 1.3 mm; patella and tibia 1.5; metatarsus 0.9; tarsus 0.5. Second patella and tibia 1.3 mm; third 0.9; fourth 1.4.

Diagnosis. The contrasting markings of the female (Figs. 221, 222) separate this species from others.

Alpaida nigrofrenata (Simon),
new combination
Figures 223–225; Map 3

Araneus nigrofrenatus Simon, 1895: 816. Female holotype from Caraça [Minas Gerais], Brazil (MNHN), examined. Bonnet, 1955: 550.

Aranea nigrofrenata:—Roewer, 1942: 848.

Description. Female. Carapace orange, with black band between median and lateral eyes (Fig. 225). Sternum orange. Legs orange with distal half of tibiae black, metatarsi, tarsi black. Abdomen light orange, without marks. Abdomen with anterior hump and paired bulges on sides (Fig. 225). Total length 5.9 mm. Carapace 2.1 mm long, 1.6 wide. First femur 1.7 mm; patella and tibia 2.0; metatarsus 1.1; tarsus 0.6. Second patella and tibia 1.8 mm; third 1.1; fourth 1.7.

Note. The illustrations were made from

the holotype; the description from specimens from Rio Grande do Sul.

Variation. Females vary in total length from 4.5 to 5.9 mm.

Diagnosis. The black band between the eyes (Fig. 225) is diagnostic. The epigynum has a groove in the lobe (Fig. 224), as do several preceding species, but differs by the gentle curvature of the lips on each side of the lobe (Fig. 223).

Records. BRAZIL *Rio Grande do Sul:* Garruchos, São Borja, 8 Dec. 1975, ♀ (A. A. Lise, MCN 3237); Iraí, 20 Nov. 1975, ♀ (MCN 3083).

Alpaida natal new species

Figures 226, 227

Holotype. Male holotype and male paratype from Natal, Rio Grande do Norte, Brazil, June 1911 (Stanford Exped., W. M. Mann, holotype MZSP ex MCZ, paratype MCZ). The specific name is a noun in apposition after the locality.

Description. Male. Carapace, chelicerae, labium, sternum orange. Endites black. Legs dark dusky; coxae dusky yellow, fourth mostly yellow. Dorsum of abdomen black with discrete round white patches (Fig. 226); sides black; venter white with distinct straight border toward black sides, spinnerets dusky. Posterior median eyes 0.8 diameter, lateral eyes 0.7 diameter of anterior median eyes. Total length 4.5 mm. Carapace 2.1 mm long, 1.6 wide. First femur 1.9 mm; patella and tibia 2.2; metatarsus 1.4; tarsus 0.7. Second patella and tibia 1.8 mm; third 1.3; fourth 2.1.

Diagnosis. The contrasting markings of the abdomen (Fig. 226) and the elongate

median apophysis with a proximal elongation (Fig. 227) separate this species from others.

Alpaida mato new species

Figures 228–230; Map 3

Holotype: Female from 260 km N of Xavantina, 12°49'S, 51°46'W, 400 m, Est. Mato Grosso, Brazil, cerrado scrub (Xavantina-Cachimbo Exped., ex MCZ, MZSP). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, coxae, proximal quarter of femora, light orange; distal leg articles black. Dorsum of abdomen orange-white with tiny white spots most dense in a longitudinal line (Fig. 230); venter orange-white, spinnerets dark. Secondary eyes 0.8 diameter of anterior medians. Total length 3.2 mm. Carapace 1.2 mm long, 1.0 wide. First femur 1.1 mm; patella and tibia 1.4; metatarsus 0.9; tarsus 0.5. Second patella and tibia 1.2 mm; third 0.8; fourth 1.3.

Diagnosis: The subspherical abdomen (Fig. 230) is unusual in *Alpaida* species. The epigynum lacks the groove on the lobe present in *A. nigrofrenata*, has a transverse black line on the lips (Fig. 228) and has a short wide posterior plate (Fig. 229).

Alpaida biasii new species

Figures 231–233; Map 3

Holotype. Female from Boracéia, Est. São Paulo, Brazil, 28 Feb. 1967 (P. Biasi, MZSP no. 5987). The species is named after the collector.

Description. Female. Carapace dark dusky. Chelicerae dusky. Labium, ster-

Figures 228–230. *Alpaida mato* n. sp., female. 228, epigynum, ventral. 229, epigynum, posterior. 230, dorsal.

Figures 231–233. *A. biasii* n. sp., female. 231, epigynum, ventral. 232, epigynum, posterior. 233, dorsal.

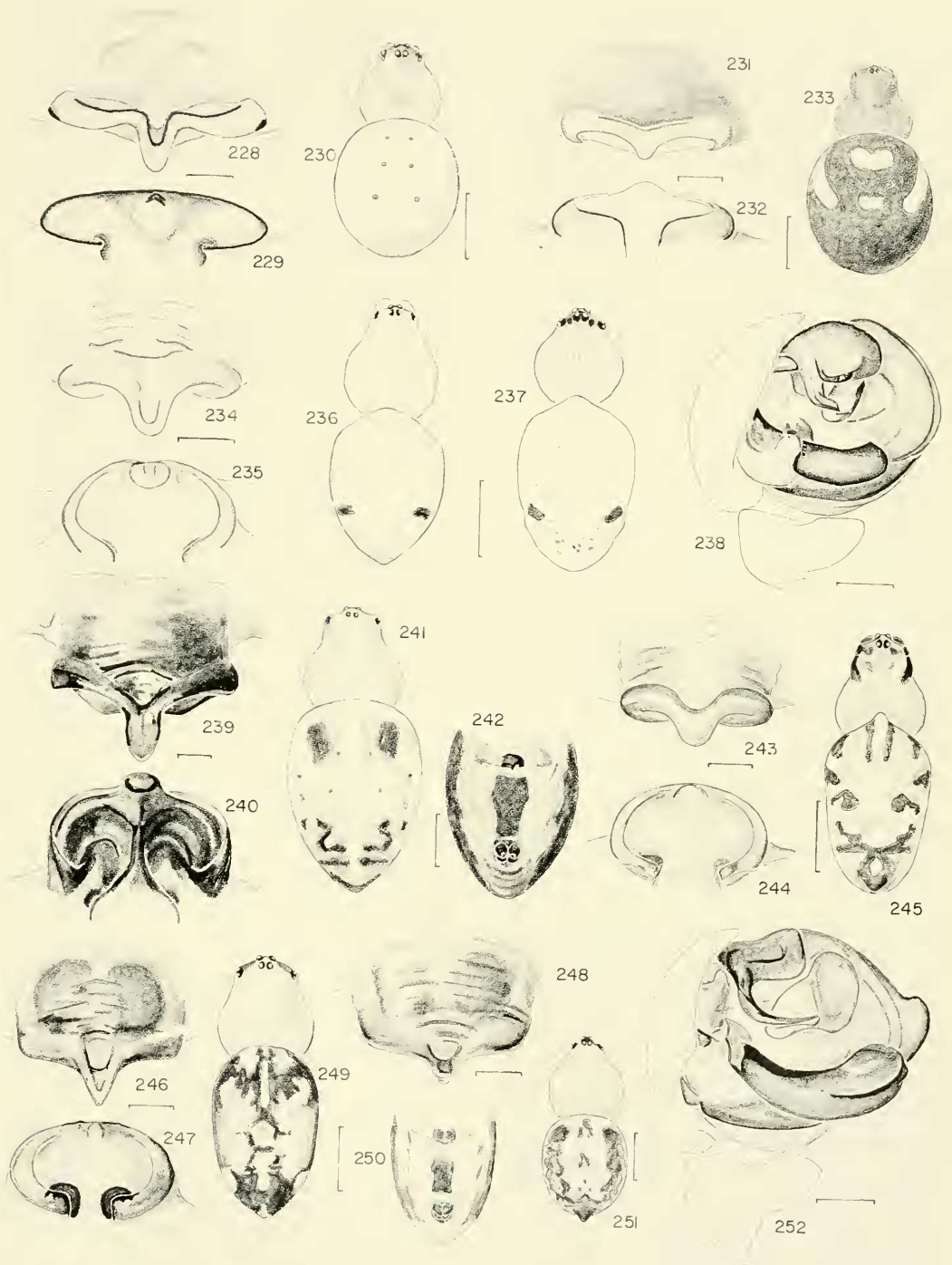
Figures 234–238. *A. bischoffi* n. sp. 234–236, female. 234, epigynum, ventral. 235, epigynum, posterior. 236, dorsal. 237, 238, male. 237, dorsal. 238, left palpus.

Figures 239–242. *A. orgaos* n. sp., female. 239, epigynum, ventral. 240, epigynum, posterior. 241, dorsal. 242, ventral.

Figures 243–245. *A. sumare* n. sp., female. 243, epigynum, ventral. 244, epigynum, posterior. 245, dorsal.

Figures 246–252. *A. pedro* n. sp. 246–250, female. 246, 248, epigynum, ventral. 247, epigynum, posterior. 249, dorsal. 250, ventral. 251, 252, male. 251, dorsal. 252, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



num, endites black. Coxae, legs yellowish-white. Dorsum of abdomen black and white (Fig. 233); venter black with a white spot on each side of spinnerets. Eyes small. Anterior median eyes, posterior median eyes each twice their diameters apart. Abdomen subspherical (Fig. 233). Total length 2.6 mm. Carapace 1.1 mm long, 1.0 wide. First femur 1.2 mm; patella and tibia 1.3; metatarsus 0.8; tarsus 0.5. Second patella and tibia 1.0 mm; third 0.8; fourth 1.1.

Diagnosis. The subspherical abdomen is like that of *A. mato*, but is distinguished by the contrasting color pattern (Fig. 233) and smaller scape of the epigynum (Figs. 231, 232).

Alpaida bischoffi new species
Figures 234–238; Map 3

Holotype. Female from Farroupilha, Rio Grande do Sul, Brazil, 29 Sept. 1978 (N. Bischoff, MCN no. 8318). The species is named after the collector.

Description. Female. Carapace, sternum, legs yellowish-white. Dorsum of abdomen white with a pair of lateral black marks (Fig. 236), dusky transverse marks posteriorly; sides light dusky; venter with scattered white spots, spinnerets dusky. Eyes small, subequal in size. Anterior median eyes and posterior median eyes 1.5 their diameter apart. Abdomen with indistinct shoulder humps and pointed posteriorly (Fig. 236). Total length 3.3 mm. Carapace 1.5 mm long, 1.1 wide. First femur 1.4 mm; patella and tibia 1.5; metatarsus 0.9; tarsus 0.5. Second patella and tibia 1.3 mm; third 1.1; fourth 1.3.

Male. Carapace yellowish-white with a black spot between posterior median and posterior lateral eyes and white pigment spot on thorax. Labium posteriorly black, endites laterally black. Sternum black with median light yellow line. Anterior coxae light, posterior coxae black; legs contrastingly ringed with black. Dorsum of abdomen white with a black spot posteriorly on each side (Fig. 237); venter with black band, widest anteriorly, around pedicel, narrow in front of spinnerets, surrounding spinnerets, longitudinal black

lines to side of band. Spinnerets black. Abdomen with slight anterior median hump, slight humps behind black patches (Fig. 237). Total length 3.5 mm. Carapace 1.4 mm long, 1.2 wide. First femur 1.4 mm; patella and tibia 1.5; metatarsus 0.8; tarsus 0.5. Second patella and tibia 1.3 mm; third 0.8; fourth 1.1.

Note. It is not certain that the male belongs with the female.

Variation. The females from São Paulo have the sternum orange with a black patch, the sides of the abdomen black; the venter is light but with black spinnerets. Females vary in total length from 2.7 to 3.3 mm.

Diagnosis. The female is distinguished from *A. pedro* by the more rounded tip on the lobe of the epigynum (Fig. 234) and from *A. orgaos* by the flatter posterior plate (Fig. 235). The male is distinguished from *A. pedro* by the slightly curved rectangular median apophysis of the palpus and the round punctate terminal apophysis (Fig. 238).

Records. BRAZIL *São Paulo:* Jundiá, Oct. 1976, 3♂ (A. Schneble, MCZ). *Rio Grande do Sul:* Farroupilha, 29 Sept. 1978, ♂ (W. Bischoff, MCN 8316).

Alpaida orgaos new species
Figures 239–242; Map 3

Holotype. Female from Serra dos Orgãos, 1,850 m, Est. Rio de Janeiro, Brazil, 19 April 1965 (H. Levi, ex MCZ, MZSP). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, legs orange. Dorsum of abdomen with median white band, sides white, and paired black patches (Fig. 241); venter with median black band enclosing spinnerets. Anterior median eyes 1.3 diameters apart; posterior median eyes their diameter apart. Abdomen oval, pointed behind (Fig. 241). Total length 5.7 mm. Carapace 2.3 mm long, 1.8 wide. First femur 1.7 mm; patella and tibia 2.3; metatarsus 1.4; tarsus 0.7. Second patella and tibia 2.0 mm; third 1.2; fourth 1.9.

Diagnosis. The female is distinguished

from *A. bischoffi* and others by the long scape (Fig. 239), and the sculpturing and shape of the posterior median plate of the epigynum (Fig. 240).

Alpaida sumare new species
Figures 243–245; Map 3

Holotype. Female from Sumaré, 200–300 m, Cidade Rio de Janeiro, Brazil, Feb. 1946 (H. Sick, AMNH). The specific name is a noun in apposition after the locality.

Description. Female. Carapace light orange with paired brown marks. Chelicerae brown; labium, endites dark brown. Sternum brownish black. Coxae orange; legs light orange, distal part of femora brown, brown patches on underside of distal articles. Dorsum of abdomen white with symmetrical black patches (Fig. 245); venter black. Posterior median eyes 1.5 diameters of others, which are subequal. Anterior median eyes their diameter apart; posterior median eyes 0.8 their diameter apart. Abdomen with shoulder humps and pointed posteriorly (Fig. 245). Total length 4.0 mm. Carapace 1.8 mm long, 1.3 wide. First femur 1.5 mm; patella and tibia 1.7; metatarsus 0.9; tarsus 0.5. Second patella and tibia 1.5 mm; third 1.1; fourth 1.5.

Diagnosis. Females are distinguished from *A. pedro* by a dark patch on each side of the head (Fig. 245), a more rounded median lobe of the epigynum, and the presence of an anterior margin on the lips on each side (Fig. 243).

Alpaida pedro new species
Figures 246–252; Map 3

Holotype. Female from Cerro Claro, São Pedro do Sul, Rio Grande do Sul, Brazil, 11 Jan. 1985 (A. A. Lise, MCN no. 12917). The specific name is a noun in apposition after the locality.

Description. Female. Carapace light orange with black mark between lateral and anterior median eyes. Sternum orange. Legs dusky orange-yellow, first two pairs darkest with venter black. Dorsum of abdomen contrasting black and white pigment (Fig. 249); sides black; venter with rectangular black mark framed by white;

spinnerets black (Fig. 250). Anterior median eyes slightly more than their diameter apart; posterior median eyes their diameter apart. Abdomen with shoulder humps and posteriorly pointed (Fig. 249). Total length 4.0 mm. Carapace 1.6 mm long, 1.2 wide. First femur 1.3 mm; patella and tibia 1.7; metatarsus 1.0; tarsus 0.5. Second patella and tibia 1.5 mm; third 0.9; fourth 1.5.

Male. Carapace, sternum, legs orange-yellow. Legs indistinctly ringed. Dorsum of abdomen with black marks, no white pigment (Fig. 251); venter yellowish, spinnerets black. Posterior median eyes 0.8 diameter; lateral eyes 0.6 diameter of anterior medians. Anterior median eyes 0.6 diameter apart; posterior median eyes their diameter apart. Second tibiae not thicker than first. Total length 3.8 mm. Carapace 1.6 mm long, 0.8 wide. First femur 1.5 mm; patella and tibia 1.9; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.5 mm; third 1.0; fourth 1.6.

Note. The association of this male with the females of *A. pedro* is uncertain; they have not been collected together. All females are variable in color and epigynum shape and so are the four males. There may be several species.

Variation. Females vary from 3.0 to 3.8 mm, males from 3.5 to 3.8. Color pattern and shape of the epigynum vary considerably (Figs. 246, 248). Some specimens lack the black eye patches or the median ventral patch. Some males have white pigment on the abdomen.

Diagnosis. Females differ from *A. bischoffi* by notched and sharply pointed triangular lobe of the epigynum (Figs. 246, 248) and by the dark semicircle on each side dorsally on the posterior plate (Fig. 247). Males are distinguished by the shape of the long median apophysis, a lateral tip on the edge of the tegulum and a small rectangular terminal apophysis (Fig. 252).

Records. BRAZIL *Rio Grande do Sul*: Estação Exp. Fitotécnica de Águas Belas, Viamão, 13 Sept. 1984, ♀, 3 imm. (A. A. Lise, MCN); Morro do Coco, Viamão, 5

May 1978, ♀ (A. A. Lise, MCN 8236); São Francisco de Paula, 23 Jan. 1981, ♀ (A. A. Lise, MCN 9538); Carazinho, 10 Nov. 1979, ♀ (H. Bischoff, MCN); Parque Estadual de Nonoai, Nonoai, 14 Jan. 1985, ♀ (A. A. Lise, MCN 12819); Farroupilha, 29 Oct. 1978, ♀, ♂ (H. Bischoff, MCN 8317, 8319); Itaim-bézinho, Cambará do Sul, 6 Jan. 1985, ♀ (A. A. Lise, MCN 12767); Vila Oliva, Caxias do Sul, 5 Jan. 1976, ♀ (P. A. Buckup, MCN 3696); Vacaria, 23 Oct. 1981, ♂ (A. A. Lise, MCN 11437); Porto Alegre, 13 Sept. 1975, ♂ (A. A. Lise, MCN 03014); Canela, 24 Aug. 1975, ♂ (A. A. Lise, MCN 3017).

Alpaida moka new species
Figures 253–256; Map 3

Holotype. Female from Nueva Moka, 350 m, Dpto. Santa Cruz, Bolivia [17°19'S, 63°33'W], Feb. 1951 (Prosen, MLP). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, legs yellow. Labium, sternum, endites black. Coxae light yellow. Dorsum of abdomen white with four dusky semi-circles on each side, posterior tip black (Fig. 255); venter with black band between epigynum and enclosing spinnerets (Fig. 256). Abdomen with posterior rounded tail (Fig. 255). Total length 4.5 mm. Carapace 1.5 mm long, 1.3 wide. First femur 1.7 mm; patella and tibia 1.9; metatarsus 1.3; tarsus 0.5. Second patella and tibia 1.5 mm; third 0.9; fourth 1.4.

Note. The only specimen has the epigynum

standing up and its ventral surface facing anteriorly.

Diagnosis. The tiny lobe of the epigynum (Fig. 253) and the subtriangular posterior median plate (Fig. 254) separate this species from similar ones.

Alpaida haligera (Archer)
Figures 257–260; Map 3

Lariniacantha haligera Archer, 1971: 159, fig. 5, ♀. Female holotype from San Esteban, [Est. Carabobo] Venezuela (AMNH), examined.
Alpaida haligera.—Brignoli, 1983: 256.

Description. Female. Carapace orange-yellow. Sternum orange-yellow with a median black patch. First and second patella, tibia, metatarsi and tarsi black dorsally, otherwise yellow-orange with black spots. Dorsum of abdomen orange-yellow with black patches and some white pigment spots (Fig. 259); sides with black patches (Fig. 260); venter with gray marks in center. Anterior median eyes their diameter apart; posterior median eyes slightly more than their diameter apart. Abdomen with two anterior humps and a median posterior hump (Fig. 259). Total length 5.0 mm. Carapace 2.1 mm long, 1.7 wide. First femur 2.3 mm; patella and tibia 2.6; metatarsus 1.7; tarsus 0.7. Second patella and tibia 2.1 mm; third 1.4; fourth 2.2.

Diagnosis. This female is distinguished from others by the large pointed triangular lobe (Fig. 257) and by the rectangular posterior plate of the epigynum (Fig. 258).

Figures 253–256. *Alpaida moka* n. sp., female. 253, epigynum, ventral. 254, epigynum, posterior. 255, dorsal.

Figures 257–260. *A. haligera* (Archer), female. 257, epigynum, ventral. 258, epigynum, posterior. 259, dorsal. 260, abdomen, lateral.

Figures 261–266. *A. banos* n. sp. 261–264, female. 261, epigynum, ventral. 262, epigynum, posterior. 263, dorsal. 264, ventral. 265, 266, male. 265, dorsal. 266, left palpus.

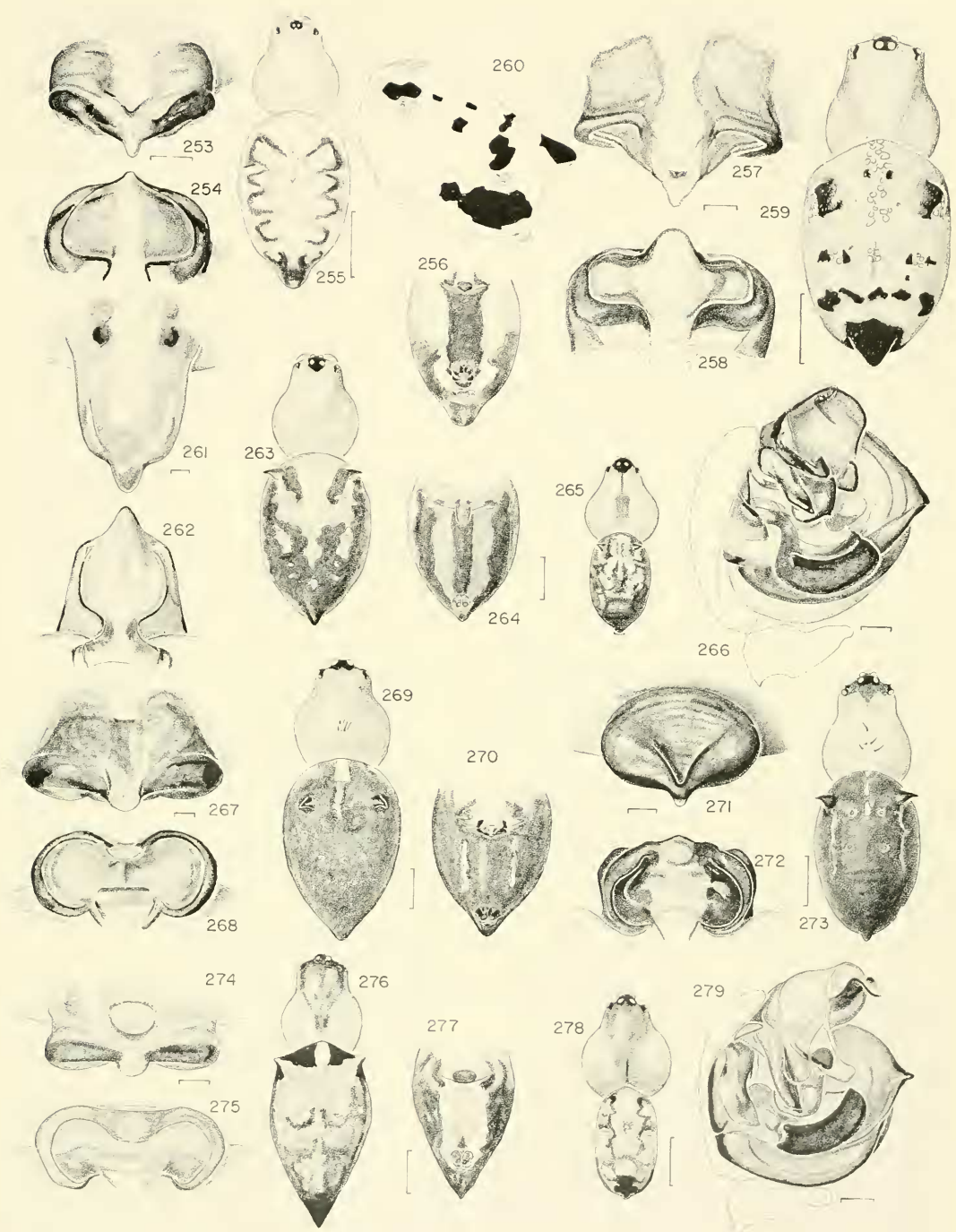
Figures 267–270. *A. cuyabeno* n. sp., female. 267, epigynum, ventral. 268, epigynum, dorsal. 269, dorsal. 270, ventral.

Figures 271–273. *A. narino* n. sp., female. 271, epigynum, ventral. 272, epigynum, posterior. 273, dorsal.

Figures 274–277. *A. amambay* n. sp., female. 274, epigynum, ventral. 275, epigynum, posterior. 276, dorsal. 277, ventral.

Figures 278–279. *A. gurupi* n. sp., male. 278, dorsal. 279, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



Alpaida banos new species
Figures 261–266; Map 4

Holotype. Female from Baños, Runtun, 2,300 m, 1°26'S, 78°24'W, Prov. Tungurahua, Ecuador, Dec. 1938 (W. Clarke-Macintyre, AMNH). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum orange. Coxae dusky; legs dusky orange. Dorsum of abdomen orange and black with some white spots (Fig. 263); venter black in center with an orange band on each side, sides black (Fig. 264). Posterior median eyes 1.3 diameters of anterior medians; anterior laterals 0.8 diameter, posterior laterals 0.9 diameter of anterior medians. Anterior median eyes slightly less than their diameter apart; posterior medians their diameter apart. Abdomen with a pair of thorns on shoulders, pointed posteriorly (Fig. 263). Total length 6.4 mm. Carapace 2.5 mm long, 2.0 wide. First femur 2.2 mm; patella and tibia 2.9; metatarsus 1.9; tarsus 1.0. Second patella and tibia 2.5; third 1.7; fourth 2.9.

Male. Coloration as in female except dusky patch on thorax (Fig. 265). Posterior median eyes 0.8 diameter of anterior median eyes; anterior laterals 0.6, posterior laterals 0.5 diameter of anterior medians. Anterior median eyes slightly less than their diameter apart; posterior median eyes their diameter apart. Second tibiae slightly thicker than first, with macrosetae. Abdomen oval with a pair of spines on shoulders. Total length 4.2 mm. Carapace 2.1 mm long, 1.7 wide. First femur 2.0 mm; patella and tibia 2.5; metatarsus 1.5; tarsus 0.9. Second patella and tibia 1.9 mm; third 1.5; fourth 2.3.

Diagnosis. Males and females can be separated from most species by the anterior lateral thorns on the abdomen (Figs. 263, 265). The female is distinguished from those of *A. narino* by the longer than wide epigynum (Figs. 261, 262). The male palpus has gently curved median apophysis and the tegulum is pointed on the side (Fig. 266).

Paratype. ECUADOR *Los Ríos*: Playas

de Juan, Montalvo, 15 m, March 1938, ♂ (W. Clarke-Macintyre, AMNH).

Alpaida cuyabeno new species
Figures 267–270; Map 4

Holotype. Female from Reserva Forestal Cuyabeno, Laguna Grande, Napo, Ecuador, 13 Feb. 1984 (L. Avilés, MECN). The specific name is a noun in apposition after the locality.

Description. Carapace, sternum orange. Chelicerae distally black. Coxae black, fourth one orange; legs black. Dorsum of abdomen black with three white marks anterior, two on sides (Fig. 269); sides black; venter black with two colorless light lines (Fig. 270). Posterior median eye area projecting; some setae in center of thorax. Posterior median eyes 1.2, anterior lateral eyes 0.7, posterior lateral eyes 0.8 diameter of anterior median eyes. Fourth legs longer than first. Abdomen with two pointed tubercles on shoulders and posterior hump (Fig. 269). Total length 7.6 mm. Carapace 3.1 mm long, 2.3 wide. First femur 2.7 mm; patella and tibia 3.4; metatarsus 2.3; tarsus 1.2. Second patella and tibia 2.9 mm; third 2.1; fourth 3.6.

Diagnosis. Unlike most species, *A. cuyabeno* has a thorn on each shoulder of the abdomen (Fig. 269); it differs from *A. banos* and *A. narino* by the shape of the epigynum; the lips are in an almost straight transverse line (Fig. 267) while those of *A. narino* are V-shaped.

Alpaida narino new species
Figures 271–273; Map 4

Holotype. Female from near Barbacoas, 20 m, Dpto. Nariño, Colombia, 20 March, 1974 (W. Eberhard no. 737, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellow, eye region black; chelicerae proximal half yellow, distal black; labium, endites, coxae, legs black. Sternum black, posteriorly yellow. Dorsum of abdomen black, a median anterior longitudinal white line and paraxial lateral pair of pigmentless lines (Fig. 273); sides with an anterior white

line; venter black. Carapace with several macrosetae on middle of thorax. Lateral eyes, 0.7 diameter; posterior median eyes 1.5 diameters of anterior median eyes. Anterior median eyes less than one diameter apart; posterior median eyes more than one diameter apart. Abdomen with pair of anterior recurved thorns and posterior median hump (Fig. 273). Total length 5.4 mm. Carapace 2.5 mm long, 1.7 wide. First femur 2.1 mm; patella and tibia 2.4; metatarsus 1.7; tarsus 0.9. Second patella and tibia 2.1 mm; third 1.5; fourth 2.5.

Diagnosis. Females differ from *A. banos* by having an oval epigynum with a V-shaped ventral notch (Fig. 271).

Alpaida amambay new species
Figures 274–277; Map 3

Holotype. Female from 10 km south of Bella Vista, Dpto. Amambay, Paraguay, 11 Oct. 1979 (Exped. Mus. Genève, MNHG). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellowish with dusky to black marks. Endites black; sternum yellow with white pigment. Coxae yellowish with dusky patches, second black; leg ringed black and yellowish. Dorsum of abdomen with white cardiac mark between black, behind this gray grading into black posteriorly (Fig. 276). Sides black; venter with two white lines, one on each side of pigmentless area (Fig. 277). Posterior median eyes 1.5 diameters of others, which are subequal. Fourth leg longer than first. Abdomen shield-shaped, pointed behind, with pointed shoulder humps and hump dorsally in front of posterior tip (Fig. 276). Total length 6.3 mm. Carapace 2.7 mm long, 2.0 wide. First femur 2.0 mm; patella and tibia 2.5; metatarsus 1.7; tarsus 0.9. Second patella and tibia 2.3 mm; third 1.8; fourth 2.9.

Diagnosis. Females have a narrower abdomen (Fig. 276) than the related species *A. cuyabeno* and *A. narino* and the notch of the epigynum is anterior to the nearly straight posterior edge (Fig. 274).

Alpaida gurupi new species
Figures 278, 279; Map 3

Holotype. Male from Canindé, Rio Gurupi, Pará, Brazil, 27–28 Feb. 1966 (B. Malkin, AMNH). The specific name is a noun in apposition after the locality.

Description. Male. Carapace orange with head and middle of thorax dusky. Sternum orange, with median black streak. Coxae, legs dusky orange. Dorsum of abdomen with pattern of black lines and white pigment spots (Fig. 278); venter with square black area bordered on each side by longitudinal orange band, black on each side. Anterior median eyes 0.8 their diameter apart; posterior median eyes their diameter apart. Second tibiae thicker than first, with macrosetae. Abdomen oval. Total length 4.0 mm. Carapace 2.1 mm long, 1.6 wide. First femur 2.0 mm; patella and tibia 2.5; metatarsus 1.5; tarsus 0.8. Second patella and tibia 1.8 mm; third 1.6; fourth 2.4.

Diagnosis. This male is distinguished from other species of *Alpaida* by the gently curved median apophysis and the hooded appearance of the terminal apophysis (Fig. 279).

Alpaida marmorata (Taczanowski),
new combination
Figures 280–288; Map 4

Singa marmorata Taczanowski, 1873, 125, ♀. Female holotype from Uassa, French Guiana [Uaçá, Amapá, Brazil] (PAN), examined. Roewer, 1942: 877. *Araneus marmoratus*:—Bonnet, 1955: 534.

Note. The vial of the holotype was labeled “?Singa juvenile” without a specific name. However, the contents of the vial fit the description of the species. The vial has been relabeled.

Description. Female. Carapace yellow, with reticulated pattern, brown on each side of head. Sternum blackish-brown. Legs with fine dark rings, broken on dorsum. Dorsum of abdomen white with two jagged black lines (Fig. 286); venter black with a white patch on each side of pedicel.

Anterior median eyes 0.7 diameter apart, posterior medians their diameter apart. Abdomen longer than wide with a pair of low shoulder humps and a posterior median hump (Fig. 287). Total length 5 mm. Carapace 1.6 mm long, 1.4 wide. First femur 1.8 mm; patella and tibia 2.0; metatarsus 1.6; tarsus 0.9. Second patella and tibia 1.8 mm; third 1.2; fourth 1.9.

Variation. All three specimens are between 4.9 and 5.0 mm total length. The shape of the lip is variable (Figs. 280–285). One specimen lacks shoulder humps.

Diagnosis. The epigynum has the lip turned up (Fig. 285), unlike that of any other species. Perhaps a median lobe was torn off.

Records. ECUADOR *Napo*: Río Tarapuy, Feb. 1983, ♀ (L. Avilés, MECN). PERU *Huánuco*: Tingo María, 10 Jan. 1947, ♀ (J. C. Pallister, AMNH).

Alpaida simla new species
Figures 289–293; Map 4

Holotype. One female holotype, one male, six immature paratypes from Simla, Trinidad, Lesser Antilles, April 1964 (A. M. Chickering, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange, head and rim of thorax black. Sternum orange, sides dusky; endites black. Coxae dusky on orange; legs orange with femora and patellae dusky. Dorsum of abdomen with black pattern and pairs of white spots (Fig. 291); venter, black. Anterior lateral eyes and posterior lateral eyes 0.8; poste-

rior median eyes 1.5 diameters of anterior median eyes. Fourth legs longer than first. Abdomen oval, pointed behind overhanging spinnerets (Fig. 291). Total length 4.8 mm. Carapace 2.2 mm long, 1.5 wide. First femur 2.0 mm; patella and tibia 2.3; metatarsus 1.6; tarsus 0.9. Second patella and tibia 2.1 mm; third 1.6; fourth 2.5.

Male. Coloration as in female (Fig. 292). Venter with a pair of pigmentless lines, one on each side. First and second tibiae thick with some macrosetae. Total length 4.2 mm. Carapace 2.1 mm long, 1.7 wide. First femur 2.3 mm; patella and tibia 2.3; metatarsus 1.6; tarsus 0.9. Second patella and tibia 1.9 mm; third 1.7; fourth 2.5.

Variation. Total length of females from 4.7 to 4.8 mm, males 4.1 to 4.2.

Diagnosis. The species differs from similar species by having the sides of the thorax black (Figs. 291, 292). Females differ by the large median lobe of the epigynum, larger than the lateral lobes (Fig. 289). Males differ by the curved median apophysis, with two sides parallel, and by the wide embolus (Fig. 293).

Natural History. A male was collected with a pit-fall trap.

Paratypes. LESSER ANTILLES *Trinidad*: Port of Spain, 1913, ♀ (R. Thaxter, MCZ); Spring Hill, Arima, 18–19 July 1979, ♂ (L. N. Sorkin, AMNH).

Alpaida hartliebi new species
Figures 294–297; Map 4

Holotype. Female holotype and two female, two immature paratypes from Porto Alegre, Rio Grande

Figures 280–288. *Alpaida marmorata* (Taczanowski), female. 280–282, epigynum, ventral. 283, 284, epigynum, posterior. 285, epigynum, lateral. 286, 287, dorsal. 288, ventral. 280, 283, 285, 286 (syntype). 281, 284, 287, 288, (Peru). 282, (Ecuador).

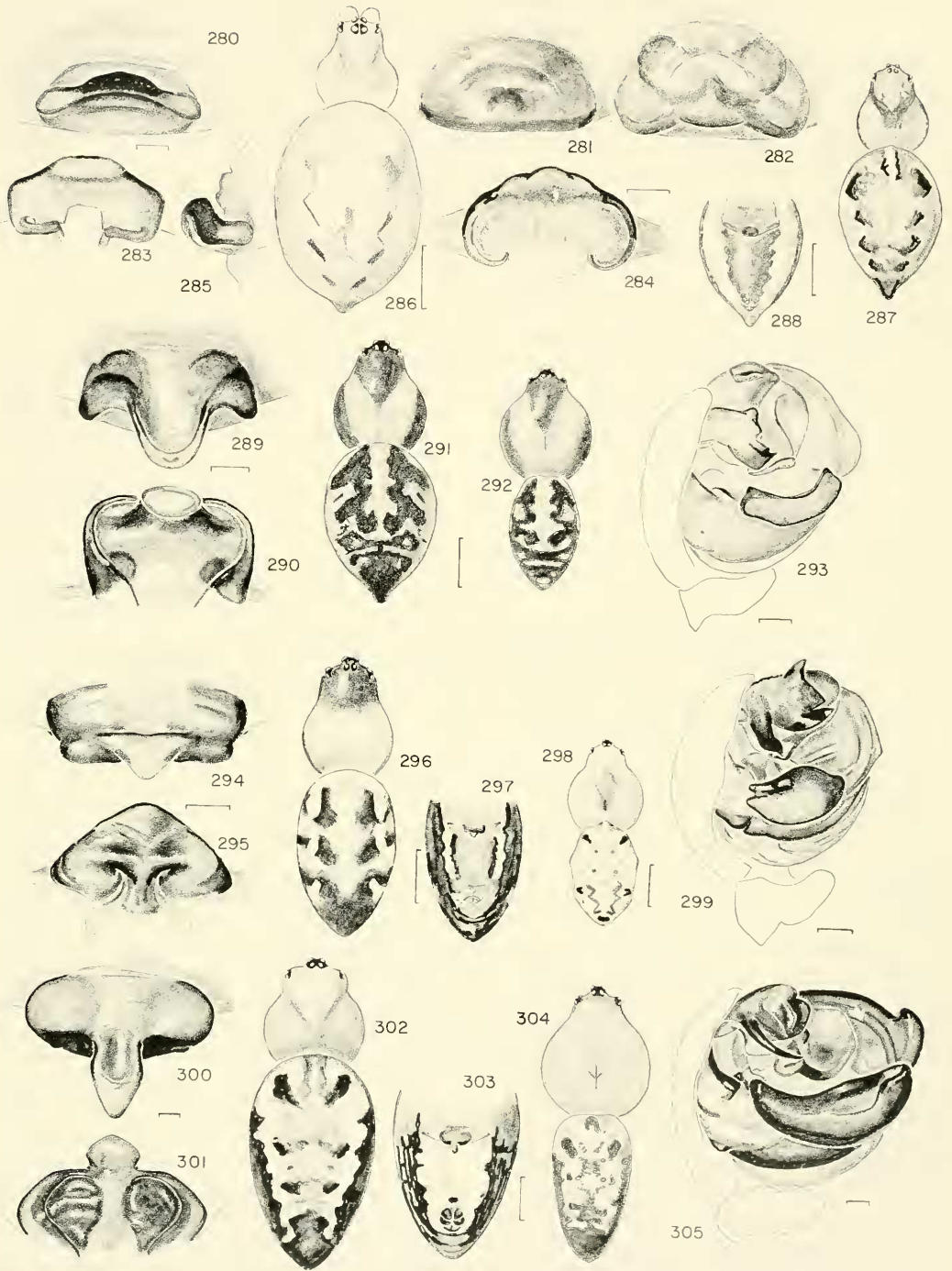
Figures 289–293. *A. simla* n. sp. 289–291, female. 289, epigynum, ventral. 290, epigynum, posterior. 291, dorsal. 292, 293, male. 292, dorsal. 293, left palpus.

Figures 294–297. *A. hartliebi* n. sp. 294–297, female. 294, epigynum, ventral. 295, epigynum, posterior. 296, dorsal. 297, ventral.

Figures 298, 299. *A. jacaranda* n. sp., male. 298, dorsal. 299, palpus.

Figures 300–305. *A. gallardoi* n. sp. 300–303, female. 300, epigynum, ventral. 301, epigynum, posterior. 302, dorsal. 303, ventral. 304, 305, male. 304, dorsal. 305, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



do Sul, Brazil, 16 Nov. 1963 (C. A. Hartlieb, MCN no. 1282). The species is named after the collector.

Description. Female. Carapace orange with black head and rim. Chelicerae, labium, endites black. Sternum, legs dusky orange; coxae darker dusky orange. Dorsum of abdomen with pairs of black and pairs of white patches (Fig. 296), venter with two parallel white bands (Fig. 297). Carapace narrower in eye region than other species. Anterior median eyes and posterior median eyes each 1.5 diameters apart. Fourth legs slightly longer than first. Abdomen pointed behind (Fig. 296). Total length 5.2 mm. Carapace 2.0 mm long, 1.5 wide. First femur 1.8 mm; patella and tibia 2.1; metatarsus 1.4; tarsus 0.8. Second patella and tibia 1.9 mm; third 1.3; fourth 2.2.

Note. The type specimens are in poor physical condition. The tip of the epigynum appears loosely attached and probably tears off.

Diagnosis. Females distinguished from those of the similar *A. gallardoi* by the straight transverse lip of the epigynum (Fig. 294) and the transverse swelling of the posterior plate (Fig. 295).

Alpaida jacaranda new species
Figures 298, 299; Map 4

Holotype. Male from Fazenda Jacaranda, Itamarajú, Bahia, Brazil, 9 Dec. 1977 (J. S. Santos, MCN no. 11032). The specific name is a noun in apposition after the locality.

Description. Male. Carapace orange with darker patch in middle. Sternum orange with white pigment. Legs orange. Dorsum of abdomen with white pigment on gray, five dusky spots and a pair of dusky zig-zag lines (Fig. 298); venter black with white spot on each side of spinnerets. Anterior median eyes and posterior lateral eyes subequal; anterior laterals 0.8 diameter; posterior median eyes 1.3 diameters of anterior medians. Anterior median eyes 0.6 their diameter apart; posterior median eyes 0.8 their diameter apart. Legs thick; venter of second femora with short macrosetae, 5 on one side, 14 on other; second

tibiae with macrosetae; fourth trochanters with two short macrosetae. Abdomen oval, pointed behind (Fig. 298). Total length 4.5 mm; carapace 2.2 mm long, 1.7 wide. First femur 2.2 mm; patella and tibia 2.5; metatarsus 1.5; tarsus 0.7. Second patella and tibia 2.0 mm; third 1.3.

Diagnosis. The ovoid median apophysis, slightly pointed on each end, with a small finger projecting toward the cymbium (Fig. 299), is distinctive.

Alpaida gallardoi new species
Figures 300–305; Map 4

Holotype. Female holotype and two female paratypes from Bella Vista, Prov. Buenos Aires, Argentina, Jan. 1966 (J. M. Gallardo, MACN nos. 8490, 8491). The species is named after the collector.

Description. Female. Carapace, sternum orange. Coxae orange with black spots; legs with contrasting black and orange rings. Dorsum of abdomen with paired black spots (Fig. 302); sides black, anterior orange, sides orange-white; venter orange-white, black on sides. Posterior median eyes 1.5 diameters of anterior median eyes. Abdomen oval, posteriorly pointed (Fig. 302). Total length 7.0 mm. Carapace, 2.8 mm long, 2.2 wide. First femur 2.4 mm; patella and tibia 2.7; metatarsus 1.8; tarsus 0.9. Second patella and tibia 2.5 mm; third 1.8; fourth 2.8.

Male from Rio Grande do Sul. Coloration as in female (Fig. 304). Total length 6.5 mm. Carapace 3.2 mm long, 2.5 wide. First femur 2.9 mm; patella and tibia 3.6. Second patella and tibia 2.7 mm; third 2.0; fourth 3.3.

Variation. Total length of females varies from 5.6 to 8.0 mm, of males from 6.3 to 6.5. Some specimens have a black mark in the center of the light venter of the abdomen.

The holotype female and a male from Rio Grande do Sul (MCN) are described and illustrated.

Diagnosis. Females differ from those of *A. hartliebi* and others by the parallel margin of the scape and the dark lip on each side in ventral view (Fig. 300). Males differ

by a very large boat-shaped median apophysis (Fig. 305), a lobe on the margin of the tegulum and a small round terminal apophysis (Fig. 305).

Natural History. Specimens have been collected in Paraguay in undisturbed tall forest.

Paratypes. BRAZIL *Santa Catarina:* Pinhal, Dec., Jan. 1947–1949, 6♀ (A. Maller, AMNH, MCZ). *Rio Grande do Sul:* Garruchos, São Borja, 10 Dec. 1975, 5♀, ♂ (A. A. Lise, MCN); Montenegro, 3 Nov. 1977, ♀ (H. A. Gastral, MCN); Santo Leopoldo, Nov., Dec. 1964, 3♀ ♂ (C. Volla, MZSP). PARAGUAY *Paraguarí:* Parque Nac. Ybyaú, 28 Sept. 1985, ♀ (J. A. Kochalka, MNHNP). ARGENTINA *Buenos Aires:* La Plata, ♀ (Blanco, MLP); Ranelagh, 3 Mar. 1963, ♀ (O. de Ferrariis, AMNH).

Alpaida sobradinho new species
Figures 306–309; Map 4

Holotype. Female from Sobradinho, Rio Grande do Sul, Brazil, 10 Jan. 1985 (A. A. Lise, MCN no. 12886). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange-yellow; sides of head and groove between head and carapace dusky. Labium, chelicerae, endites dusky. Sternum orange with dusky sides. Coxae orange-yellow; legs orange-yellow with black rings. Dorsum of abdomen black with orange shoulder patches and an orange mark on each side behind shoulder patch (Fig. 308); sides black; venter orange-yellow between genital groove and spinnerets, underlain by white pigment spots (Fig. 309). Abdomen oval, pointed behind. Total length 6.0 mm. Carapace 2.3 mm long, 1.8 wide. First femur 1.9 mm; patella and tibia 2.3; metatarsus 1.3; tarsus 0.8. Second patella and tibia 1.9 mm; third 1.3; fourth 2.0.

Diagnosis. This female is distinguished from those of *A. gallardoi* and *A. hartliebi* by the small lobe on the epigynum (Fig. 306) and the two circular bulges that form the posterior plate (Fig. 307).

Alpaida itapua new species
Figures 310–312; Map 4

Holotype. Female from km A436, Centro Forestal, Pirapó, Dpto. Itapúa, Paraguay, 4 Aug. 1982 (J. A. Kochalka, MNHNP). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, coxae orange. Legs with black and yellowish white rings of equal width. Dorsum of abdomen with six black patches surrounded by indistinct black spots on white, and a posterior black tip (Fig. 312). Venter black with a colorless longitudinal line on each side. Eyes subequal in size. Anterior median eyes their diameter apart; posterior median eyes their diameter apart. Abdomen oval, pointed behind. Total length 8.0 mm. Carapace 3.6 mm long, 3.1 wide. First femur 2.7 mm; patella and tibia 3.4; metatarsus 1.9; and tarsus 0.9. Second patella and tibia 3.0 mm; third 2.1; fourth 3.1.

Diagnosis. Females differ from *A. alto* by the small set-off median lobe and transverse, almost straight, posterior edge (Fig. 310).

Natural History. Kochalka (in letter) found the specimen in undisturbed forest among the roots and bases of trees. The small webs are a few inches above the ground and have a line going from the hub to a retreat that is located in a convenient cavity in the substrate. The spider is at the hub day and night and runs to the retreat when disturbed. It had a red cephalothorax, and black and yellow legs when alive. Owners of other webs were not collected.

Alpaida picchu new species
Figures 313–316; Map 4

Holotype. Female from Torontoy Canyon, base of Machu Picchu, 2,000 to 2,200 m, Depto. Cuzco, Peru, 19–23 June 1964 (B. Malkin, AMNH). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, coxae orange. Legs dusky orange-brown. Dorsum of abdomen maculated black with three white marks anteriorly

(Fig. 315); venter with white pigment enclosing three black patches (Fig. 316), sides black. Posterior median eyes 1.3 diameters of anterior median eyes; lateral eyes 0.8 diameter of anterior medians. Anterior median eyes their diameter apart; posterior median eyes slightly more than their diameter apart. Abdomen [damaged] oval, pointed behind, with shoulder humps (Fig. 315). Total length 6.0 mm. Carapace 2.6 mm long, 2.0 wide. First femur 2.1 mm; patella and tibia 2.7; metatarsus 1.5; tarsus 0.9. Second patella and tibia 2.1; third 1.8; fourth 2.6.

Diagnosis. *Alpaida picchu* differs from *A. alto* and *A. itapua* by having the two margins of the lips of the epigynum parallel in ventral view (Fig. 313) and having a median groove on the bulging lips, with the lobe depressed, visible in posterior view (Fig. 314).

Alpaida sevilla new species
Figures 317–319; Map 4

Holotype. Female from Sevilla, Dpto. Valle, Colombia, 25 July 1926 (E. W. Walker, AMNH). The specific name is a noun in apposition after the locality.

Description. Female. Carapace blackish brown with sides of thorax lighter brown. Labium, sternum, endites dark brown. Coxae yellow; legs yellow-brown ringed with black. Dorsum of abdomen white with black marks (Fig. 319); venter black with white marks on sides of spinnerets and white behind spinnerets. Posterior median eyes 1.2 diameters; lateral eyes 0.9 diameter of anterior medians. Anterior median eyes slightly more than their diameter apart; posterior median eyes slightly less

than their diameter apart. Abdomen with shoulder humps and pointed behind (Fig. 319). Total length 4.6 mm. Carapace 1.9 mm long, 1.5 wide. First femur 1.4 mm; patella and tibia 1.9; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.6 mm; third 1.1; fourth 1.7.

Diagnosis. Females are distinguished from similar species by the tripartite posterior median plate of the epigynum (Fig. 318).

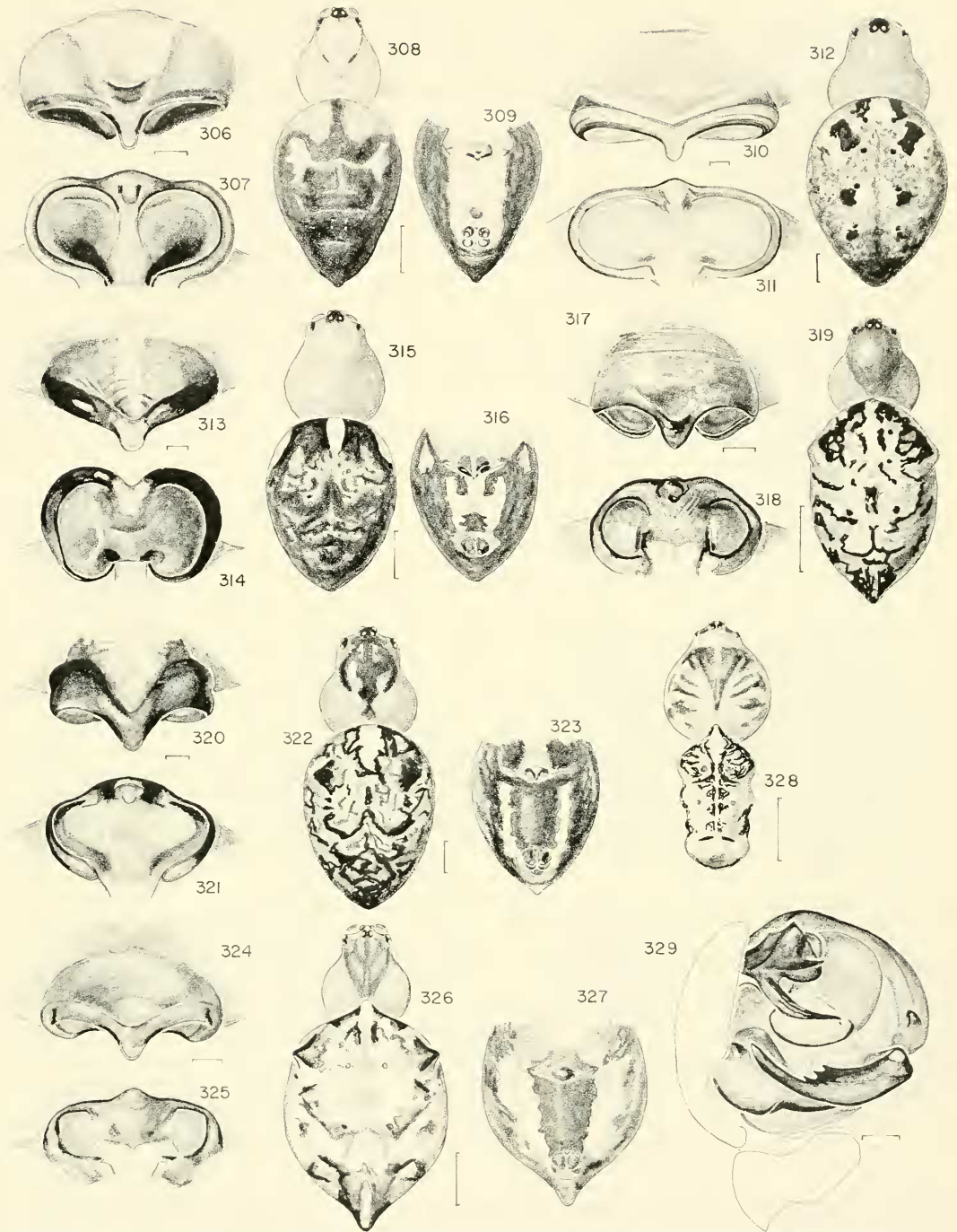
Alpaida alto new species
Figures 320–323; Map 4

Holotype. Female from km 12, de Stroessner, Centro Forestal de Alto Paraná, Dept. Alto Paraná, Paraguay, 22 July 1982 (J. A. Kochalka, MNHNP). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange with a black pattern on head; labium black; sternum orange. Endites, coxae black; legs ringed with black and light orange. Dorsum of abdomen with black patches and streaks, cardiac area white (Fig. 322); venter black with a pair of parallel white lines (Fig. 323). Secondary eyes are 0.8 diameters of anterior median eyes. Anterior median eyes slightly less than their diameter apart, posterior median eyes their diameter apart. Abdomen oval, pointed behind (Fig. 322). Total length 8.4 mm. Carapace 3.7 mm long, 2.8 wide. First femur 3.4 mm; patella and tibia 4.0; metatarsus 2.7; tarsus 1.2. Second patella and tibia 3.7 mm; third 2.5; fourth 3.9.

Diagnosis. Females are distinguished from similar species with similar coloration by the epigynum whose median lobe has margins which continue laterally into

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- Figures 306–309. *Alpaida sobradinho* n. sp., female. 306, epigynum, ventral. 307, epigynum, posterior. 308, dorsal. 309, ventral.
 Figures 310–312. *A. itapua* n. sp., female. 310, epigynum, ventral. 311, epigynum, posterior. 312, dorsal.
 Figures 313–316. *A. picchu* n. sp., female. 313, epigynum, ventral. 314, epigynum, posterior. 315, dorsal. 316, ventral.
 Figures 317–319. *A. sevilla* n. sp., female. 317, epigynum, ventral. 318, epigynum, posterior. 319, dorsal.
 Figures 320–323. *A. alto* n. sp., female. 320, epigynum, ventral. 321, epigynum, posterior. 322, dorsal. 323, ventral.



Figures 324–327. *A. thaxteri* n. sp., female. 324, epigynum, ventral. 325, epigynum, posterior. 326, dorsal. 327, ventral.

Figures 328, 329. *A. boraceia* n. sp., male. 328, dorsal. 329, left palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

a concave posterior edge; the posterior tip of the notch is in line with the posterior edge and in posterior view the lips are slightly swollen dorsally (Fig. 321).

Alpaída thaxteri new species
Figures 324–327; Map 4

Holotype. Female holotype and one female paratype from Port of Spain, Trinidad, Lesser Antilles, 1913 (R. Thaxter, MCZ). The species is named after the collector.

Description. Female. Carapace yellow with black pattern on head. Chelicerae with anterior black patch and tip black. Labium, endites, sternum, black. Legs yellowish with narrow dusky rings. Dorsum of abdomen marked black and white (Fig. 326); venter black with white on sides (Fig. 327). Lateral eyes 0.8 diameter of median eyes. Abdomen with anterior pair of humps on anterior median and posterior median tubercle. Total length 6.0 mm. Carapace 2.2 mm long, 1.7 wide. First femur 1.9 mm; patella and tibia 2.3; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.9 mm; third 1.4; fourth 2.0.

Diagnosis. Unlike *A. wenzeli* the margin of the lips are parallel and the lips of the epigynum continue into the median lobe (Fig. 324).

Alpaída boraceaia new species
Figures 328, 329; Map 4

Holotype. Male from Boraceaia, Salesópolis, 800 m, Est. São Paulo, Brazil, 21–25 Oct. 1963 (M. Oliveira, P. Wygodzinsky, AMNH). The specific name is a noun in apposition after the locality.

Description. Male. Carapace orange with brown streaks, a light orange transverse band behind eyes (Fig. 328). First coxae dusky, others black; legs orange, in-

distinctly ringed dark brown, first and second tibiae black. Dorsum of abdomen with median white line, irregular black blotches to side of line (Fig. 328); venter orange. Second tibiae thicker than first with macrosetae. Abdomen anteriorly pointed, sides wavy (Fig. 328). Total length 3.8 mm. Carapace 2.1 mm long, 1.7 wide. First femur 2.3 mm; patella and tibia 2.8; metatarsus 1.6; tarsus 0.7. Second patella and tibia 2.1 mm; third 1.3; fourth 1.8.

Diagnosis. This male distinguished from others of the species group by the carapace markings (Fig. 328) and by the structure of the palpus, which has a long median apophysis with an extension toward the cymbium and a small angular terminal apophysis (Fig. 329).

Alpaída iguazu new species
Figures 330–335; Map 4

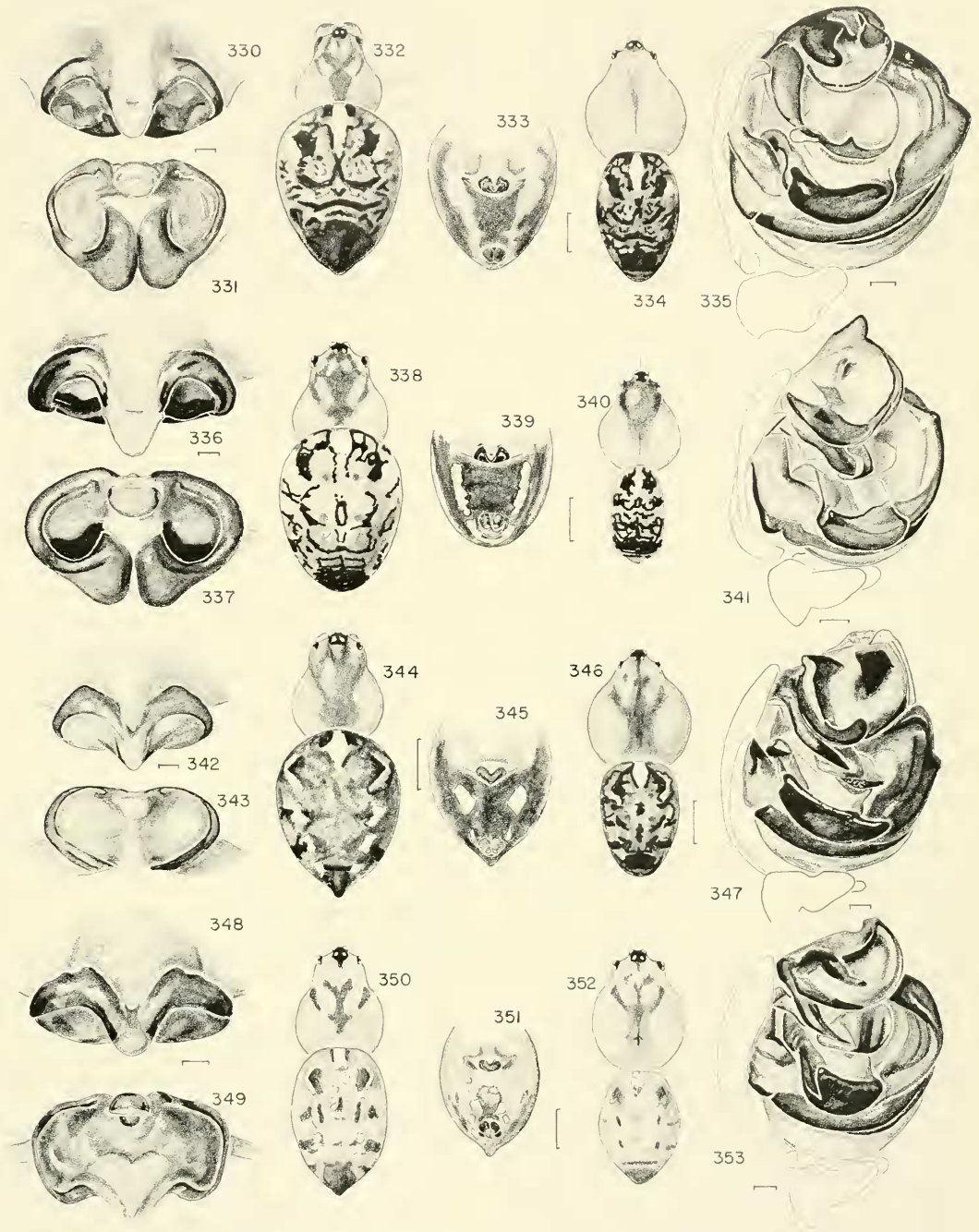
Holotype. Female holotype and one juvenile paratype from Puerto Iguazú, Prov. Misiones, Argentina, Oct. 1953 (Schiapelli, Galiano, MACN no. 3907). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange with black pattern (Fig. 332). Labium, endites black. Sternum orange with median black patch. Coxae orange with dark marks; legs with narrow orange and black rings. Dorsum of abdomen with white cardiac mark, mottled gray and black (Fig. 332); venter black with a pair of pigmentless bands approaching each other posteriorly (Fig. 333). Abdomen oval pointed behind, with slight shoulder humps (Fig. 332). Total length 5.8 mm. Carapace 2.6 mm long, 2.0 wide. First femur 2.1 mm; patella and tibia 2.7; metatarsus 1.6; tarsus 0.8. Second patella and tibia 2.3 mm; third 1.6; fourth 2.5.

Figures 330–335. *Alpaída iguazu* n. sp. 330–333, female. 330, epigynum, ventral. 331, epigynum, posterior. 332, dorsal. 333, ventral. 334–335, male. 334, dorsal. 335, left palpus.

Figures 336–341. *A. tijuca* n. sp. 336–339, female. 336, epigynum, ventral. 337, epigynum, posterior. 338, dorsal. 339, ventral. 340, 341, male. 340, dorsal. 341, palpus.

Figures 342–345. *A. wenzeli* n. sp., female. 342, epigynum, ventral. 343, epigynum, posterior. 344, dorsal. 345, ventral.



Figures 346, 347. *A. caxias* n. sp., male. 346, dorsal. 347, palpus.

Figures 348-353. *A. canoa* n. sp. 348-351, female. 348, epigynum, ventral. 349, epigynum, posterior. 350, dorsal. 351, ventral. 352, 353, male. 352, dorsal. 353, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

Male. Coloration as in female but carapace with less black (Fig. 334). Total length 5.9 mm. Carapace, 3.1 mm long, 2.5 mm wide. First femur 3.0 mm; patella and tibia 3.6; metatarsus 2.1; tarsus 1.1. Second patella and tibia 2.9 mm; third 2.2; fourth 3.1.

Note. The male was not collected with the female but it has a similar color pattern. The female holotype and the male from Misiones Prov. are described and illustrated.

Variation. Total length of females from 5.8 to 7.0 mm. The largest are specimens from Petrópolis, which have a pattern as in this species. The venter of epigynum of these specimens is more like that of *A. rosa* and the posterior bulges are smaller.

Diagnosis. Unlike similar species, the median end of the rim of the epigynum is swollen in posterior view (Fig. 331). This swelling is longer and narrower (Fig. 331) than that of *A. tijuca*. The median apophysis of the palpus, unlike that of *A. caxias*, is from 5 to 7 o'clock in the circle of the palpus, and the basal curved prong (between 11 and 12 o'clock) of the terminal apophysis is shorter (Fig. 335).

Paratypes. BRAZIL *Rio de Janeiro*: Petrópolis, 2♀ (MNRJ). *Santa Catarina*: Pinal, Jan. 1948, 2♀ (A. Maller, AMNH). *Rio Grande do Sul*: Itaúba, Arroio de Tigre, 11 Apr. 1978, ♀ (A. A. Lise, MCN 7947). ARGENTINA *Misiones*: [no locality] 1958, ♂ (R. V. Partridge, MACN 8487).

Alpaida tijuca new species
Figures 336–341; Map 4

Holotype. Female holotype and one male paratype from Tijuca, Est. Rio de Janeiro, Brazil (M. Eugenio, MNRJ no. 58146). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange with black markings (Fig. 338). Chelicerae orange-yellow with median black patch. Labium, endites black. Sternum orange with black border and black central spot. Coxae orange-yellow; legs ringed black and orange. Dorsum of abdomen with black pattern and white pigment spots (Fig. 338);

venter black with two pigmentless lines approaching each other posteriorly. Anterior median eyes 0.8 their diameter apart; posterior median eyes 0.6 their diameter apart. Abdomen oval. Total length 5.9 mm. Carapace 2.7 mm long, 2.2 wide. First femur 2.5 mm; patella and tibia 2.9; metatarsus 1.9; tarsus 0.9. Second patella and tibia 2.5 mm; third 1.7; fourth 2.5.

Male. Coloration as in female (Fig. 340). Eye sizes as in female. Second tibiae with macrosetae. Fourth trochanters with a short macroseta. Total length 4.5 mm. Carapace 2.4 mm long, 1.8 wide. First femur 1.9 mm; patella and tibia 2.3; metatarsus 1.3; tarsus 0.7. Second patella and tibia 1.8 mm; third 1.5; fourth 2.1.

Variation. Females vary in total length from 5.9 to 7.4 mm. The females from Petrópolis have slight shoulder humps with the posterior hump more distinct.

The holotype and male paratype are illustrated and described.

Diagnosis. The female is distinguished from most *Alpaida* by the swollen median dorsal ends of the epigynum (Fig. 337), and from *A. iguazu* by the shorter and wider swellings. The male is distinguished by the dentate distal tooth of the terminal apophysis (Fig. 341).

Paratypes. BRAZIL *Rio de Janeiro*: Petrópolis, 2♀ (MNRJ 286); [?] Faxenda da Castaneira, ♀ (P. Peterson, ZMK).

Alpaida wenzeli (Simon),
new combination
Figures 342–345; Map 4

Araneus wenzeli Simon, 1897a: 874. Nine female, 10 juvenile syntypes from St. Vincent Island, Lesser Antilles (BMNH), examined.

Aranea wenzeli:—Roewer, 1942: 856.

Description. Female. Head and thorax mostly black (Fig. 344), sides of thorax yellowish. Labium, sternum, endites black. Coxae yellowish. Legs ringed black and yellow. Dorsum of abdomen mostly dusky to black with a white cardiac mark and pairs of white spots, which approach each other posteriorly (Fig. 344). Venter black with a pair of white patches (Fig. 345).

Anterior median eyes their diameter apart; posterior median eyes slightly less than their diameter apart. Abdomen with shoulder humps and posterior tip. Total length 5.2 mm. Carapace 2.1 mm long, 1.8 wide. First femur 2.1 mm; patella and tibia 2.5; metatarsus 1.6; tarsus 0.8. Second patella and tibia 2.0 mm; third 1.3; fourth 2.2.

Diagnosis. The epigynum of *A. wenzeli* in ventral view is similar to that of *A. haligera*, but *A. wenzeli* has wider lips in ventral view (Fig. 342), narrower in posterior view (Fig. 343).

Alpaida caxias new species

Figures 346, 347; Map 4

Holotype. Male from Duque de Caxias, Est. Rio de Janeiro, Brazil, 5 Sept. 1961 (M. Alvarenga, AMNH). The specific name is a noun in apposition after the locality.

Description. Male. Carapace orange with dark brown pattern. Sternum orange with median black streak. Coxae orange, legs orange with dark brown rings. Dorsum of abdomen black mottled on gray with white cardiac mark (Fig. 346); venter black. Posterior median eyes 0.8; lateral eyes 0.6 diameter of anterior median eyes. Anterior median eyes slightly less than their diameter apart; posterior median eyes their diameter apart. Second tibiae slightly thicker than first with macrosetae. Total length 5.2 mm. Carapace 2.9 mm long, 2.3 wide. First femur 2.7 mm; patella and tibia 3.2; metatarsus 1.9; tarsus 0.9. Second patella and tibia 2.5 mm; third 1.9; fourth 2.7.

Diagnosis. This male differs from similar species by having the median apophysis shifted toward the cymbium from 5 to 7 o'clock on the circular palpus and having a heavy curved basal prong on the terminal apophysis (Fig. 347).

Alpaida canoa new species

Figures 348–353; Map 4

Holotype. Female holotype and male and two female paratypes from Curumim, Capão da Canoa, Rio Grande do Sul, Brazil, 18 Jan. 1978 (C. J. Becker,

MCN no. 8128). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellowish with black marks (Fig. 350). Chelicerae yellowish with black patch on front. Labium, endites black. Sternum yellowish with median black patch. Coxae yellowish with black ring distally; legs yellowish with contrasting black rings. Dorsum of abdomen white and black (Fig. 350); venter with black mark anterior to spinnerets and two indistinct longitudinal white lines (Fig. 351). Posterior median eyes, anterior lateral eyes, posterior lateral eyes all 0.8 diameter of anterior median eyes. Anterior median eyes slightly less than one diameter apart; posterior median eyes 1.5 diameters apart. Abdomen oval, pointed behind with shoulder humps (Fig. 350). Total length 6.5 mm. Carapace 3.1 mm long, 2.1 wide. First femur 2.3 mm; patella and tibia 2.9; metatarsus 1.9; tarsus 1.1. Second patella and tibia 2.5 mm; third 1.7; fourth 2.7.

Male. Coloration as in female. Abdomen shorter than that of female (Fig. 352). Total length 5.9 mm. Carapace 3.2 mm long, 2.5 wide. First femur 2.7 mm; patella and tibia 3.2; metatarsus 1.8; tarsus 1.0. Second patella and tibia 2.6 mm; third 2.0; fourth 2.7.

Variation. Total length of females from 6.5 to 7.2 mm, of males from 5.6 to 5.9. The female holotype and male paratype from Rio Grande do Sul are illustrated and described.

Diagnosis. The female differs by having an angular lip in the epigynum and the median lobe with a seam (Fig. 348), the male has a small projecting median apophysis in the palpus, the terminal apophysis describing a half circle (Fig. 353).

Natural History. Specimens from Rio de Janeiro had the web near the ground, 10 cm diameter, on steep shaded roadside.

Paratypes. BRAZIL *Rio de Janeiro:* Paineiras on Corcovado Mtn., 30 Mar. 1983, ♀, 3 imm (H. L. Levi, MCZ). *Rio Grande do Sul:* Curumim, Capão da Canoa, 3 Nov. 1974, ♂ (C. J. Becker, MCN 2408).

Alpaida yuto new species
Figures 354–359; Map 4

Holotype. Female holotype and female paratype from Yuto, Jujuy Prov., Argentina, Nov. 1966 (M. E. Galiano, MACN no. 8455). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum orange. Coxae orange with dusky patches; legs contrastingly ringed orange and black. Dorsum of abdomen patterned (Fig. 356); sides black; venter with black patch surrounded by orange-white (Fig. 357). Secondary eyes 0.8 diameter of anterior median eyes. Anterior median eyes 0.6 diameter apart, posterior median eyes their diameter apart. Abdomen oval, pointed behind. Total length 7.8 mm. Carapace 3.4 mm long, 2.7 wide. First femur 3.1 mm; patella and tibia 3.7; metatarsus 2.5; tarsus 1.1. Second patella and tibia 3.1 mm; third 2.1; fourth 3.4.

Male. Coloration as in female (Fig. 358). Secondary eyes 0.8 diameter of anterior median eyes. Anterior median eyes and posterior medians each their diameter apart. Second tibia slightly thicker than first, with macrosetae. Fourth trochanters with one or two short macrosetae. Total length 6.4 mm. Carapace 3.1 mm long, 2.7 wide. First femur 3.1 mm; patella and tibia 3.8; metatarsus 2.3; tarsus 1.1. Second patella and tibia 2.9; third 2.1; fourth 3.2.

Variation. Total length of females from 5.9 to 8.7 mm, of males, 6.4 to 6.8. The specimens from the Chaco have black patches on the head.

The female holotype and male paratype from Jujuy Province are described and illustrated.

Diagnosis. Females differ from those of *A. canoa* by more rounded lips in ventral view of the epigynum (Fig. 354) and wider

lips when viewed from posterior (Fig. 355). The males differ from those of *A. canoa* by having the embolus sickle-shaped, the median apophysis narrower and the edge of the terminal apophysis concave (Fig. 359).

Natural History. Kochalka (in letter) states that, like *A. itapua*, *A. yuto* is found in undisturbed forest among roots at the bases of trees. The small webs are a few inches above the ground and have a line going from the hub to a retreat in the substrate. The spider remains at the hub day and night and runs to the retreat when disturbed.

Records. PARAGUAY *Concepción:* Apa [Río Apa] 1909, ♀ (AMNH). *Chaco:* Parque Nac. Defensores del Chaco, 24–31 July 1983, 2♀, ♂ imm. (J. Kochalka, MNHNP, MCZ). ARGENTINA *Jujuy:* Yuto, El Pandanoso, Oct. 1967, ♂, March 1967, ♀ (M. E. Galiano, MACN 8456, 8457).

Alpaida weyrauchi new species
Figures 360–363; Map 4

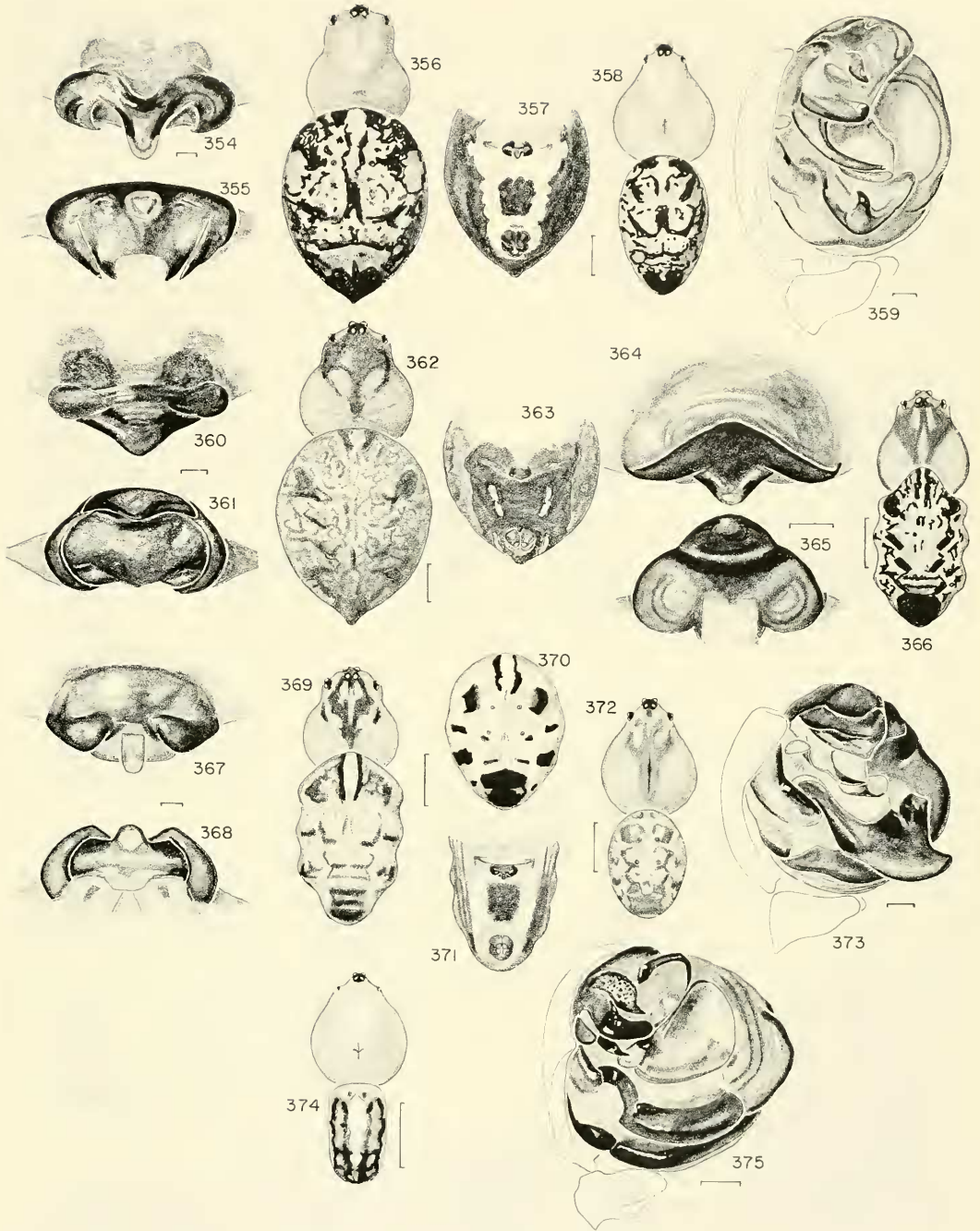
Holotype. Female holotype, two female, one immature paratypes from Valle Chanchamayo, 800 m, Peru [11°35'S, 75°19'W, Dpto. Junín] 1 Feb. 1953 (W. K. Weyrauch, CAS, one paratype in MCZ). The species is named after the collector.

Description. Female. Carapace orange, head and middle of thorax black. Labium, endites, black. Sternum orange with median black streak and a black border. Coxae black; legs ringed black on orange. Dorsum of abdomen with cardiac mark with some white pigment and indistinct black pattern on orange (Fig. 362); venter with a pair of parallel light lines on black (Fig. 363). Secondary eyes 0.8 times diameter of anterior median eyes. Anterior median eyes their diameter apart; posterior me-

Figures 354–359. *Alpaida yuto* n. sp. 354–357, female. 354, epigynum, ventral. 355, epigynum, posterior. 356, dorsal. 357, ventral. 358, 359, male. 358, dorsal. 359, left palpus.

Figures 360–363. *A. weyrauchi* n. sp., female. 360, epigynum, ventral. 361, epigynum, posterior. 362, dorsal. 363, ventral.

Figures 364–366. *A. deborae* n. sp., female. 364, epigynum, ventral. 365, epigynum, posterior. 366, dorsal.



Figures 367-373. *A. lubinae* n. sp. 367-371, female. 367, epigynum, ventral. 368, epigynum, posterior. 369, 370, dorsal. 371, ventral. 372, 373, male. 372, dorsal. 373, palpus.

Figures 374-375. *A. yungas* n. sp., male. 374, dorsal. 375, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

dian eyes slightly less than their diameter apart. Abdomen oval, pointed behind (Fig. 362). Total length 7.7 mm. Carapace 3.7 mm long, 2.9 wide. First femur 3.5 mm; patella and tibia 4.1; metatarsus 2.6; tarsus 1.2. Second patella and tibia 3.6 mm; third 2.4; fourth 3.7.

Note. The holotype (Figs. 360–363) has a complete epigynum, the tip is torn off from two paratypes, the breaking point is visible in the intact epigynum.

Variation. Total length of females from 6.2 to 7.7 mm.

Diagnosis. Females differ from *A. deborae* by having the lips of the epigynum in a straight transverse line (Fig. 360).

Record. PERU *Junín*: San Ramón, 20 July 1965, ♀ (P. Wygodzinsky, AMNH).

Alpaida deborae new species

Figures 364–366; Map 4

Holotype. Female from Browns Berg, 5°N, 55°27'W, Brokopondo Prov., Surinam, 20 Feb. 1982, (D. Smith Trail, MCZ). The species is named after the collector.

Description. Female. Carapace yellow white with black head and black rim around thorax (Fig. 366). Labium, endites, sternum, black. Coxae, yellow-white; legs yellow white with black rings. Dorsum of abdomen with black chevrons and anterior median white line (Fig. 366); venter black. Abdomen with three pairs lateral humps. Total length 4.5 mm. Carapace 2.1 mm long, 1.5 wide. First femur 1.7 mm; patella and tibia 2.2; metatarsus 1.3; tarsus 0.8. Second patella and tibia 1.9 mm; third 1.2; fourth 2.0.

Note. A specimen of this species from Uassa [Uaçá, Amapá, Brazil] was in the PAN collection marked *Singa guianensis* Tacz. However, the description of *Singa guianensis* does not fit the specimen so labeled.

Variation. All specimens measured 4.5 mm total length.

The holotype is described and illustrated.

Diagnosis. Females differ from those of *A. weyrauchi* by having the lips of the epigynum angled as a roof (Fig. 364) and having two sclerotized circles in posterior view (Fig. 365). As in *A. weyrauchi* the lobe has a seam where it tears off.

Paratypes. SURINAM *Brokopondo*: Browns Berg, 5°N, 55°27'W, 20 Feb. 1982, ♀ (D. Smith Trail, MCZ). FRENCH GUIANA St. Laurent de Maroni, ♀ (K. Jel-ski, PAN). BRAZIL *Pará*: Belém, Mocambo, Aug. 1970, ♀ (M. E. Galiano, MACN 8495).

Alpaida lubinae new species

Figures 367–373; Map 4

Holotype. Female from Rancho Grande, Prov. Aragua, Venezuela, June 1974 (Y. Lubin YDB 6,7,9, MCZ). The species is named after the collector.

Description. Female. Carapace orange yellow with black marks (Fig. 369). Labium, endites, black. Sternum yellowish with median black patch. Legs yellowish-white with narrow, black rings. Dorsum of abdomen mottled black with a white cardiac mark framed black (Fig. 369); sides black; venter with black square mark, light

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Figures 376–378. *Alpaida erythrothorax* (Taczanowski), female. 376, epigynum, ventral. 377, epigynum, posterior. 378, dorsal.

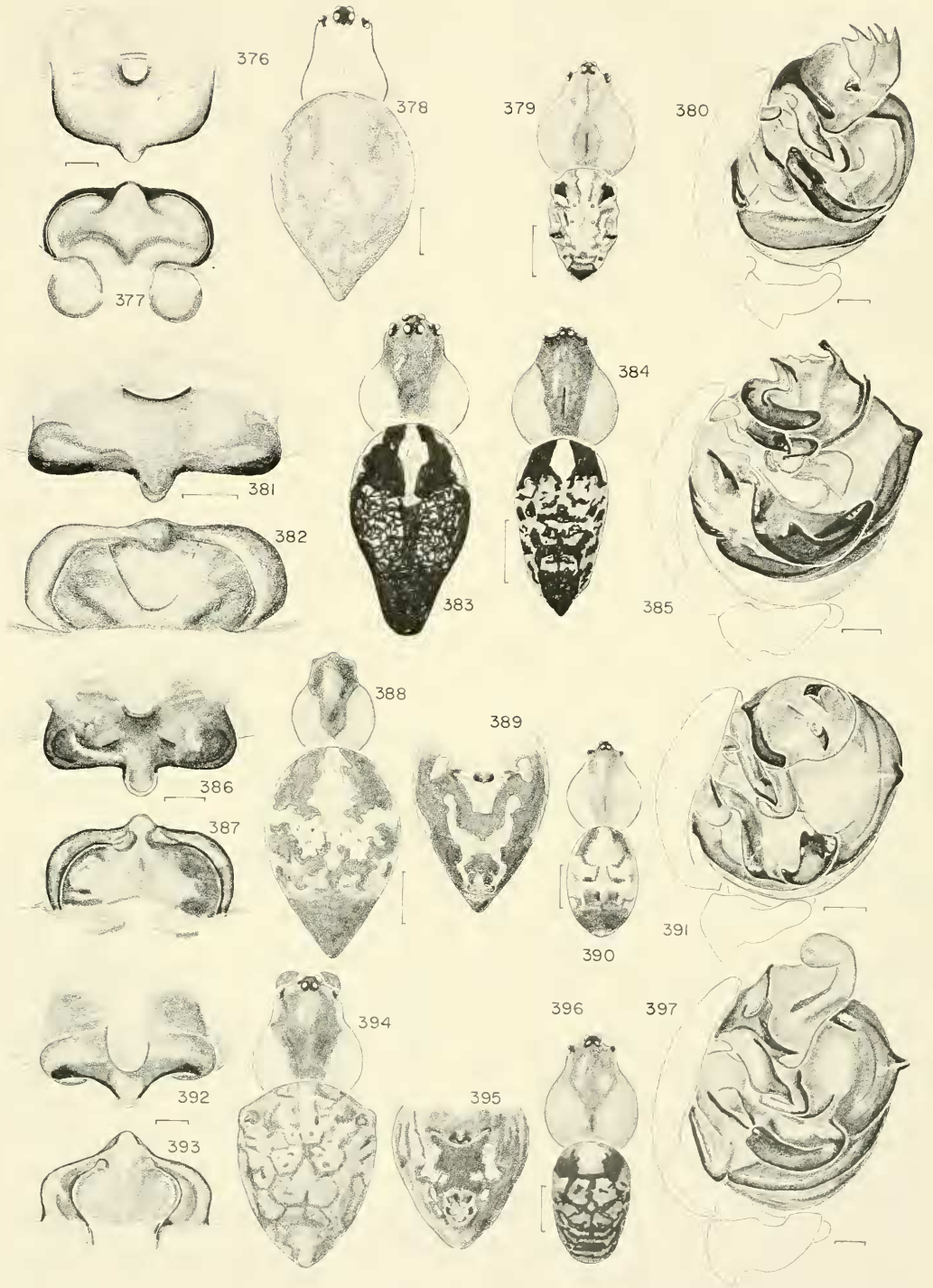
Figures 379, 380. *A. vera* n. sp., male. 379, dorsal. 380, left palpus.

Figures 381–385. *A. trilineata* (Taczanowski). 381–383, female. 381, epigynum, ventral. 382, epigynum, posterior. 383, dorsal. 384, 385, male. 384, dorsal. 385, palpus.

Figures 386–391. *A. itauba* n. sp. 386–389, female. 386, epigynum, ventral. 387, epigynum, posterior. 388, dorsal. 389, ventral. 390, 391, male. 390, dorsal. 391, palpus.

Figures 392–397. *A. antonio* n. sp. 392–395, female. 392, epigynum, ventral. 393, epigynum, posterior. 394, dorsal. 395, ventral. 396, 397, male. 396, dorsal. 397, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



on each side (Fig. 371). Abdomen of holotype has pairs of bulges on sides and is posteriorly pointed (Fig. 369). Total length 5.0 mm. Carapace 2.2 mm long, 1.9 wide. First femur 2.1 mm; patella and tibia 2.6; metatarsus 1.7; tarsus 0.9. Second patella and tibia 2.1 mm; third 1.4; fourth 2.3.

Male. Coloration as in female (Fig. 372). Eyes as in female. Second tibiae slightly thicker than first with macrosetae. Total length 4.1 mm. Carapace 2.3 mm long, 1.8 wide. First femur 2.2 mm; patella and tibia 2.7; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.9 mm; third 1.4; fourth 2.0.

Variation. Total length of females from 4.5 to 5.6 mm, males from 3.6 to 4.5. The abdomen of females may be oval with slight shoulder humps and pointed behind (Fig. 370) or when emaciated as in Figure 369.

The holotype is described and illustrated.

Diagnosis. Females distinguished by the median lobe of the epigynum, which is set off with parallel sides (Fig. 367) and has swollen lips. The median apophysis of the palpus projects to the side and the terminal apophysis is subtriangular (Fig. 373).

Paratypes. VENEZUELA *Mérida*: Mérida, July 1974, 2♀ (A. L. Edgar, MCZ). *Aragua*: Rancho Grande, many ♀♀, ♂♂ (AMNH, MACN 8469, MCZ).

Alpaida yungas new species
Figures 374, 375; Map 4

Holotype. Male from Chulumani, 1,700 m, Yungas, Dpto. La Paz, Bolivia, 17–25 Dec. 1955 (L. Peña, IRSNB). The specific name is a noun in apposition after the locality.

Description. Male. Carapace yellow. Sternum, endites black. Coxae, legs yellow, distal articles brown. Dorsum of abdomen with median white band, sides yellowish with two black bands on each side (Fig. 374); venter black with an indistinct light longitudinal line on each side surrounding spinnerets posteriorly. Anterior median eyes slightly less than their diameter apart; posterior medians their diameter apart. Second tibiae slightly thicker than first. Total length 3.4 mm. Carapace 1.7 mm

long, 1.5 wide. First femur 1.8 mm; patella and tibia 1.9; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.5 mm; third 0.9; fourth 1.4.

Diagnosis. This male differs from others by the short, stubby embolus, the long curved median apophysis with parallel sides, the heavy basal prong of the terminal apophysis, and the large conductor of the palpus (Fig. 375).

Alpaida erythrothorax (Taczanowski),
new combination
Figures 376–378; Map 4

Singa erythrothorax Taczanowski, 1873: 126. Female lectotype, 2 male and 1 juvenile paralectotypes from Cayenne, French Guiana (PAN), examined. The male paralectotypes are *A. leucogramma*. Roewer, 1942: 877.

Araneus erythrothorax:—Bonnet, 1955: 501.

Description. Female. Carapace orange. Sternum with white pigment. Coxae light orange, legs gray, first femora light on sides. Dorsum of abdomen with uneven gray pigment and a median longitudinal white band, and a white longitudinal band on each side (Fig. 378); venter between epigynum and spinnerets with a black spot in center and white pigment on each side; white pigment continuous with pigment posterior to spinnerets underneath overhang. Posterior median eyes about 1.4 diameters of anterior medians, laterals about 0.8 diameter. Anterior medians less than their diameter apart, posterior medians more than their diameter apart. Fourth legs slightly longer than first. Total length 5.8 mm. Carapace 2.4 mm long, 2.3 wide. First patella and tibia 2.4 mm; second 2.2; third 1.6. Fourth femur 2.1 mm; patella and tibia 2.4; metatarsus 1.6; tarsus 0.9.

Diagnosis. Unlike that of *A. trilineata*, the median notch is more than twice its diameter from the posterior margin of the epigynum (Fig. 376).

Alpaida vera new species
Figures 379, 380; Map 4

Holotype. Male from Vila Vera, 55°30'W, 12°46'S, Mato Grosso, Brazil, Oct. 1973 (M. Alvarenga, AMNH). The specific name is a noun in apposition after the locality.

Description. Male. Carapace orange with median brown band; band branches and fades anteriorly on head. Sternum orange with median dark mark. Coxae orange; legs ringed contrasting brown on orange. Dorsum of abdomen with white cardiac mark, black shoulder patches and black posterior tip, and black pattern on dusky orange (Fig. 379); venter black, orange longitudinal band on each side. Median eyes slightly less than their diameter apart. Second tibiae the same thickness as first. Fourth trochanters with two small macrosetae. Abdomen oval with shoulder humps and posterior tip. Total length 4.5 mm. Carapace 2.4 mm long, 1.9 wide. First femur 2.2 mm; patella and tibia 2.6; metatarsus 1.7; tarsus 0.8. Second patella and tibia 2.1 mm; third 1.5; fourth 2.2.

Diagnosis. The projecting terminal apophysis of the palpus with five fingers (Fig. 380) separates this species from similar species.

Alpaيدا trilineata (Taczanowski),
new combination

Figures 381–385; Map 4

Epeira trilineata Taczanowski, 1878: 162, pl. 2, fig. 13, ♀. Female lectotype and one female paralectotype here designated from Amable María [640 m, Dpto. Junín, prov. Tarma], Peru (PAN), examined.

Aranea trisignata Roewer, 1942: 854. New name for *Epeira trilineata* Taczanowski, 1878, thought preoccupied by *Aranea trilineata* Linnaeus, 1767. NEW SYNONYMY.

Araneus trilineatus:—Bonnet, 1955: 618.

Description. Female. Carapace yellow-white with a longitudinal black band which covers head. Distal half of chelicerae black. Sternum, coxae yellow-white. Legs ringed. Dorsum of abdomen with black and white pattern (Fig. 383); sides black; venter yellow-white with black marks between epigynum and spinnerets, and some white pigment spots on each side of the median black area. Posterior median eyes 1.2 diameters; laterals 0.8 diameter of anterior median eyes. Abdomen pointed behind (Fig. 383). Fourth legs longer than first. Total length 4.3 mm. Carapace 1.8 mm long, 1.5 wide. First patella and tibia 2.1

mm; second 1.7; third 1.4. Fourth femur 1.6 mm; patella and tibia 2.1; metatarsus 2.0; tarsus 0.6.

Male. Coloration and eye sizes as in female (Fig. 384), except first three pairs of coxae black. Second tibiae as thick as first and with macrosetae. Abdomen oval, pointed behind, with distinct shoulder humps. Total length 4.5 mm. Carapace 2.1 mm long, 1.6 wide. First femur 1.9 mm; patella and tibia 2.2; metatarsus 1.2; tarsus 0.6. Second patella and tibia 1.7; third 1.4; fourth 2.1.

Note. The paralectotype is much lighter in color; it seems to be the same species as the lectotype.

Diagnosis. Females are distinguished from those of *A. erythrothorax* and *A. itauba* by the wide notch of the epigynum, which lies a distance equal to its width from the posterior edge (Fig. 381). The males are distinguished from those of *A. itauba* by a longer median apophysis in the palpus, a “horizontally” curved basal prong of the terminal apophysis, and a distal frayed edge (Fig. 385).

Record. PERU Junín: San Ramón, 20–27 July 1965, ♂, (P. B. Wygodzinsky, AMNH).

Alpaيدا itauba new species
Figures 386–391; Map 4

Holotype. Female from Itaúba, Arroio do Tigre, Rio Grande do Sul, Brazil, 10 April 1978 (C. J. Becker, MCN no. 7909). The specific name is a noun in apposition after the locality.

Description. Female. Carapace black, sides yellowish. Chelicerae, labium, endites black. Sternum yellowish with white pigment spots. Legs yellowish with narrow black rings; coxae black, fourth mostly yellowish. Dorsum of abdomen with white cardiac mark, black marks, posterior black (Fig. 388); venter marked black on yellowish (Fig. 389); spinnerets black. Anterior median eyes, lateral eyes, subequal; posterior median eyes 1.4 diameters of the others. Anterior median eyes, posterior median eyes slightly more than their diameters apart. Fourth legs longer than first. Abdomen pointed behind. Total length 5.8

mm. Carapace 1.9 mm long, 1.5 wide. First femur 1.5 mm; patella and tibia 1.9; metatarsus 1.3; tarsus 0.7. Second patella and tibia 1.7 mm; third 1.4; fourth 2.1.

Male. Coloration as in female (Fig. 390); venter of abdomen mostly light colored. Total length 3.9 mm. Carapace 1.9 mm long, 1.5 wide. First femur 1.9 mm; patella and tibia 2.1; metatarsus 1.4; tarsus 0.7. Second patella and tibia 1.5 mm; third 1.3; fourth 2.0.

Variation. Females vary in total length from 4.7 to 5.8 mm.

The female holotype and a male from Rio Grande do Sul (MCN) are described and illustrated.

Diagnosis. Females distinguished from those of *A. erythrothorax* by the black head and the larger, rounded sides of the epigynum (Fig. 386). Males distinguished from others by the shorter median apophysis and the "vertical" curved, basal prong and undivided distal margin of the terminal apophysis (Fig. 391).

Paratypes. BRAZIL *São Paulo:* Piraçununga, 16 May 1940, ♀ (Schubart, MZSP 6467); Morro do Serrote, Juguiá, 16 Nov. 1952, ♀ (Schubart, MZSP 4980). *Rio Grande do Sul:* Itaúba, Arroio de Tigre, 6 Apr. 1978, ♀ (E. M. Buckup, MCN 7830); 8 Apr. 1978, ♂ (H. Bischoff, MCN 7871). ARGENTINA *Salta:* Vada Hondo, Orán, Mar. 1967, ♂ (M. E. Galiano, MACN 8459).

Alpaida antonio new species

Figures 392–397; Map 4

Holotype. Female from Fazenda Santo Antonio, Uruçuca, Bahia, Brazil, 27 Nov. 1977 (J. S. Santos, MCN no. 11012). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange with black marks. Labium, chelicerae, endites black. Sternum light orange. Coxae dusky black; legs light orange with black rings. Dorsum of abdomen dark with indistinct folium (Fig. 394); venter with a pair of white marks on dark background (Fig. 395). Anterior median eyes and posterior median eyes each slightly less than their diameter apart. Abdomen with some

hairs, lightly sclerotized shoulder humps, and posterior point (Fig. 394). Total length 6.4 mm. Carapace 2.8 mm long, 2.1 wide. First femur 2.7 mm; patella and tibia 3.1; metatarsus 2.0; tarsus 0.9. Second patella and tibia 2.6 mm; third 1.8; fourth 2.8.

Male. Coloration as in female (Fig. 396), except sternum with median black line. Anterior median eyes 0.6 their diameter apart; posterior median eyes 0.8 their diameter apart. Second tibiae thicker than first with macrosetae. Total length 5.0 mm. Carapace 2.9 mm long, 2.3 wide. First femur 2.9 mm; patella and tibia 3.4; metatarsus 2.0; tarsus 1.0. Second patella and tibia 2.5 mm; third 2.0; fourth 2.9.

Note. Males and females were matched because of color and size. The female holotype and a male from Canindé (AMNH) are described and illustrated.

Variation. Total length of females varies from 5.9 to 6.4 mm, males from 4.7 to 5.6.

Diagnosis. Females differ from those of *A. itauba* by having the posterior tip of the notch in line with the posterior margin of the epigynum and the anterior margins of the lips on each side parallel with the posterior margins (Fig. 392), and the posterior median plate narrower (Fig. 393). Males differ from similar species in having a tooth instead of the basal prong on the terminal apophysis in the palpus and having the terminal apophysis distal and drawn out and bent "forward" (Fig. 397).

Paratypes. GUYANA *Bartica Distr.:* Kartabo, Nov. 1920, ♂ (AMNH). BRAZIL *Pará:* 59 km E of Canindé, May 1963, ♂ (B. Malkin, AMNH); Canindé, Rio Gurupi, 17 Dec. 1964, ♀ (B. Malkin, AMNH). *Bahia:* Fazenda Matiapa, Camacã, 16 Oct. 1979, ♀ (J. S. Santos, MCN 10861). *Espírito Santo:* Rio São José, 24 Sept. 1942, ♂ (H. Soares, MZSP 8031).

Alpaida niveosagillata (Mello-Leitão)

Figures 398–403; Map 4

Singa niveosagillata Mello-Leitão, 1941a: 260, fig. 1, ♀. Female holotype from Sasaima, [Dpto. Cundinamarca] Colombia (MNRJ), examined.

Alpaida niveosagillata.—Brignoli, 1983: 256. Eberhard, 1986, 73, fig. 4.2h (web).

Description. Female. Carapace yellow-white with dark marks; labium, endites, and sternum black; coxae yellow-white with a black patch; legs with black and yellowish rings of equal width. Dorsum of abdomen black and gray with anterior median and lateral white marks (Fig. 400); venter black with a pair of white patches, also, a white spot on each side of the spinnerets (Fig. 401). Abdomen oval with a posterior tubercle (Fig. 400). Total length 5.0 mm. Carapace 2.2 mm long, 1.7 wide. First femur 1.5 mm; patella and tibia 2.3; metatarsus 1.3; tarsus 0.5. Second patella and tibia 1.8 mm; third 1.1; fourth 2.0.

Male. Coloration as in female (Fig. 402). Total length 3.5 mm. Carapace 1.8 mm long, 1.5 wide. First femur 1.8 mm; patella and tibia 2.3; metatarsus 1.1; tarsus 0.8. Second patella and tibia 1.7 mm; third 1.2; fourth 1.8.

Note. Female and male have not been collected together but are matched because of similar markings.

Variation. Total length of females from 5.0 to 6.5 mm, of males from 3.5 to 4.2. A female from Dpto. Valle (MCZ) and male from Dpto. Cauca (MCZ) are described and illustrated.

Diagnosis. Females can be distinguished from all other *Alpaida* by the strongly curved lips in ventral view of the epigynum. The lips are parallel in the midline (Fig. 398). The male palpus has a sword-shaped embolus, a median apophysis with a large pointed lobe and a complexly folded terminal apophysis (Fig. 403).

Natural History. The web has been illustrated by Eberhard (1986).

Records. COLOMBIA *Valle*: 50 km S of Buenaventura, 50 m, Mar. 1973, imm., ♀ (W. Eberhard I-504, MCZ); Lago Calima, between Buga and Loboguerrero, Sept. 1973, ♀ (W. Eberhard, MCZ). *Cauca*: Pacific coastal plain, NW of Guapi, Jan. 1973, ♂ (W. Eberhard, MCZ). ECUADOR *Pichincha*: 35 km NW of Santo Domingo de los Colorados, ♂ (A. M. Nadler, AMNH).

El Oro: Buena Vista, 25 km SE Machala, ♀ (R. Walls, CAS).

Alpaida rossi new species

Figures 404–407; Map 4

Holotype. Female from Monzón Valley, Tingo María, Dpto. Huánuco, Peru, 10 Nov. 1954 (E. I. Schlinger and E. S. Ross, CAS). This species is named after the collector.

Description. Female. Carapace orange with black marks. Sternum dark brown. Coxae orange; legs orange with narrow black rings. Dorsum of abdomen with white cardiac mark on mottled brown-to-black (Fig. 406); venter black with white pigment in light area on each side (Fig. 407). Abdomen with distinct shoulder humps, slight humps on sides, and posterior pointed tip (Fig. 406). Total length 5.9 mm. Carapace 2.6 mm long, 2.0 wide. First femur 2.3 mm; patella and tibia 2.7; metatarsus 1.8; tarsus 0.9. Second patella and tibia 2.4 mm; third 1.7; fourth 2.5.

Variation. Total length of females varies from 5.9 to 6.7 mm.

The holotype is described and illustrated.

Diagnosis. The median lobe of the epigynum, unlike others, is constricted at its base and the lips are swollen toward the median (Fig. 404).

Paratypes. PERU *Huánuco*: Tingo María, 8 Oct. 1946, ♀ (J. C. Pallister, AMNH). *Ucayali*: Colonia Calleria, Río Calleria, 15 km from Ucayali, Oct. 1961, ♀ (B. Malkin, AMNH).

Alpaida boa new species

Figures 408, 409; Map 4

Holotype. Male from Fonte Boa, Amazonas, Brazil, Sept. 1975 (M. Oliveira, AMNH). The specific name is a noun in apposition after the locality.

Note. The holotype is in poor physical condition.

Description. Male. Carapace orange with head, middle of thorax, and edge of thorax black. Labium, sternum, endites black. Coxae orange; proximal half of femora orange, distal black, distal articles con-

trastingly ringed black on orange. Dorsum of abdomen with white cardiac mark and indistinct mottled black folium on dusky orange (Fig. 408); venter black, sides dusky orange. Anterior median eyes slightly more than their diameter apart; posterior median eyes their diameter apart. Second tibiae same diameter as first with macrosetae. Total length 3.5 mm. Carapace 1.8 mm long, 1.5 wide. First femur 1.8 mm; patella and tibia 2.1; metatarsus 1.4; tarsus 0.7. Second patella and tibia 1.8 mm; third 1.2; fourth 2.0.

Diagnosis. This male differs from others by the long embolus, lobed median apophysis and large tegulum in the palpus (Fig. 409).

Alpaida negro new species

Figures 410–414; Map 4

Holotype. Female from Rio Negro, Est. Paraná, Brazil (Z. Rolas, MNRJ no. 58419). The specific name is a noun in apposition after the locality.

Description. Female. Carapace black, orange only on sides of thorax (Fig. 412). Labium, endites black; chelicerae black, dark orange distally. Sternum orange with black border and median black mark. Coxae black, fourth with yellow; legs ringed black and orange, black bands wider than orange. Dorsum of abdomen black and white (Fig. 412); venter black with a pair of white marks. Posterior median eyes 0.8 diameter of anterior medians; lateral eyes 0.7 diameter. Anterior median eyes 0.7 their diameter apart; posterior median eyes their diameter apart. Abdomen oval, pointed behind. Total length 7.9 mm. Car-

apace 3.1 mm long, 2.4 wide. First femur 2.8 mm; patella and tibia 3.6; metatarsus 2.3; tarsus 1.0. Second patella and tibia 2.9 mm; third 2.0; fourth 3.1.

Male. Coloration as in female. Eye sizes as in female. Anterior median eyes and posterior median eyes each 0.6 times their diameter apart. Second tibiae thicker than first, with a few macrosetae. Total length 7.8 mm. Carapace 4.1 mm long, 3.4 wide. First femur 4.1 mm; patella and tibia 5.1; metatarsus 2.9; tarsus 1.3. Second patella and tibia 3.9 mm; third 3.0; fourth 4.5.

Note. Males are larger than females.

Diagnosis. Females are distinguished from *A. moata* by a more rounded lobe on the epigynum (Fig. 410) and a transverse groove on the median plate (Fig. 411). Males distinguished by a wider median apophysis, a more slender embolus, and the unique folds of the terminal apophysis (Fig. 414). The heads of *A. negro* are black, those of *A. moata* orange.

Paratypes. BRAZIL *Mato Grosso*: [no locality] Oct. 1976, ♀, 2♂ (M. Alvarenga, AMNH).

Alpaida moata (Chamberlin and Ivie), new combination

Plate 2; Figures 415–420; Map 4

Araneus moatus Chamberlin and Ivie, 1936: 47, pl. 14, fig. 125. ♀. Female holotype from Barro Colorado Island, Panama (AMNH) examined. Bonnet, 1955: 545.

Aranea moata:—Roewer, 1942: 847.

Description. Female. Carapace, light orange, area of median eyes black. Chelicera, orange proximally, black distally.

Figures 398–403. *Alpaida niveosagillata* (Mello-Leitão). 398–401, female. 398, epigynum, ventral. 399, epigynum, posterior. 400, dorsal. 401, ventral. 402, 403, male. 402, dorsal. 403, left palpus.

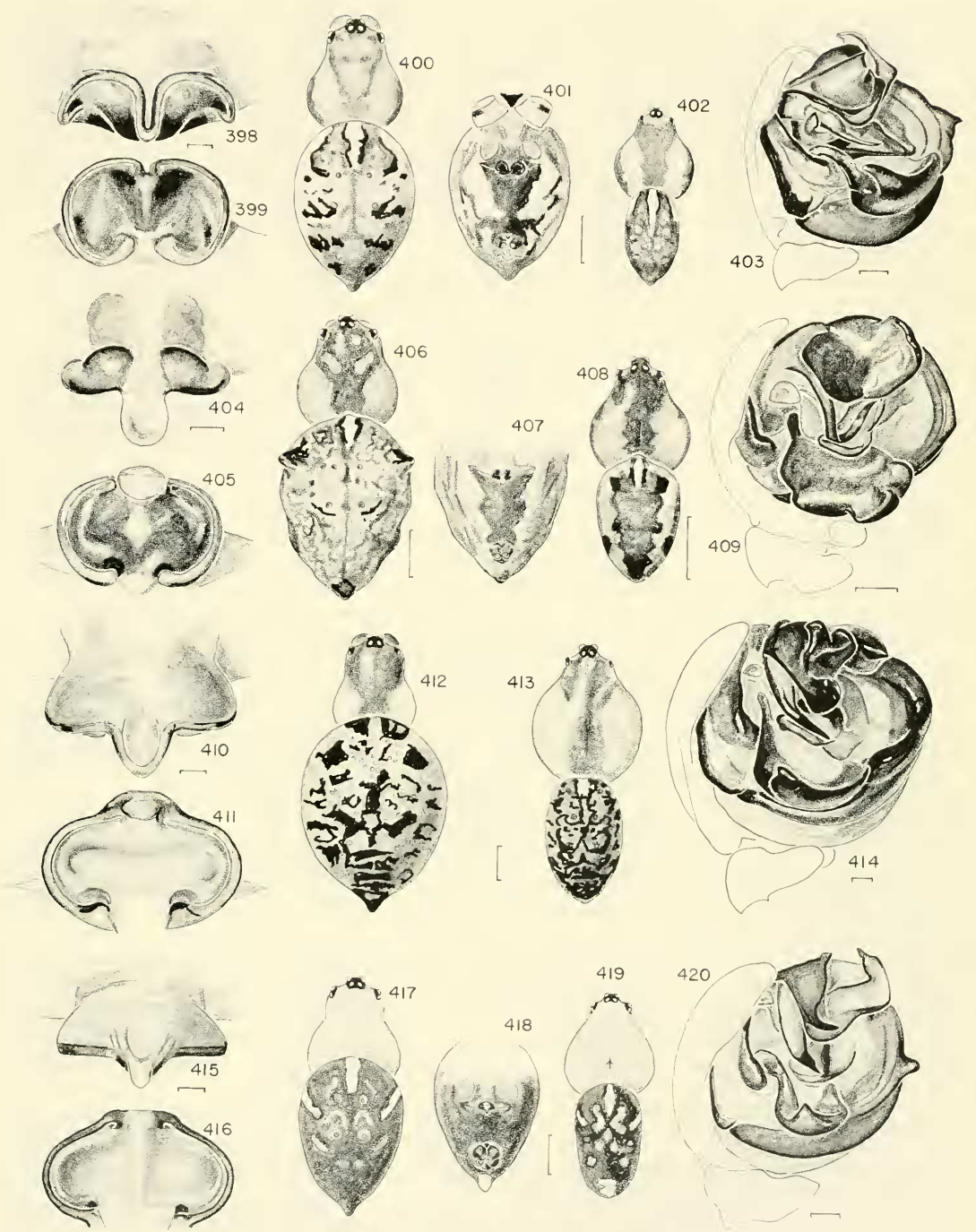
Figures 404–407. *A. rossi* n. sp., female. 404, epigynum, ventral. 405, epigynum, posterior. 406, dorsal. 407, ventral.

Figures 408, 409. *A. boa* n. sp., male. 408, dorsal. 409, palpus.

Figures 410–414. *A. negro* n. sp., 410–412, female. 410, epigynum, ventral. 411, epigynum, posterior. 412, dorsal. 413–414, male. 413, dorsal. 414, palpus.

Figures 415–420. *A. moata* (Chamberlin and Ivie). 415–418, female. 415, epigynum, ventral. 416, epigynum, posterior. 417, dorsal. 418, ventral. 419, 420, male. 419, dorsal. 420, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



Sternum, orange with small, median black streak; coxae, orange; legs, black. Dorsum of abdomen, black with anterior median light mark and paired indistinct white patches (Fig. 417); venter, black; book lung covers, brown. Abdomen oval, pointed posteriorly above spinnerets (Fig. 417). Total length 6.2 mm. Carapace 3.1 mm long, 2.1 wide. First femur 2.9 mm; patella and tibia 3.5; metatarsus 2.2; tarsus 1.1. Second patella and tibia 2.9 mm; third 2.0; fourth 3.1.

Male. Coloration as in female (Fig. 419). Total length 4.8 mm. Carapace 2.7 mm long, 2.1 wide. First femur 2.5 mm; patella and tibia 3.1; metatarsus 1.8; tarsus 1.0. Second patella and tibia 2.3 mm; third 1.7; fourth 2.6.

Variation. Total length of females from 6.1 to 6.9 mm, males from 4.5 to 5.1. Females from Colombia have the head and coxae black, the sternum orange with a black patch and a pair of white spots on the venter of the abdomen.

A male and female from Gamboa, Panama (MCZ) are described and illustrated.

Diagnosis. Unlike *A. negro*, the epigynum has a more pointed median lobe (Fig. 415) and a dorsoventral median ridge on the posterior median plate (Fig. 416). The male differs by having a narrower median apophysis, a round hump on the edge of the tegulum and a distal finger on the terminal apophysis (Fig. 420). The species is smaller than the sympatric *A. acuta*.

Records. PANAMA *Bocas del Toro*: Río Changuinola, Corriente Grande, 13–17 Mar. 1980, ♀ (R. Ibanez, MCZ). *Panamá*: El Valle, July 1936, ♂ (AMC); Gamboa, July 1981, ♂, ♀ (W. Eberhard 2215, MCZ);

Barro Colorado Island, Lago Gatun, common (MCZ); Forest Reserve, 1939, ♂, 25 July 1954, ♂ (A. M. Chickering, MCZ). COLOMBIA *Valle*: Cisneros, Apr. 1976, ♀ (W. Eberhard 1086, MCZ); Anchicayá, Oct. 1975, ♀ (W. Eberhard 983, MCZ), 26 Oct. 1969, ♂ (W. Eberhard I-75, MCZ), Nov. 1973, ♂, ♀ (W. Eberhard, MCZ); 1975, ♂, ♀ (W. Eberhard, MCZ).

Alpaida acuta (Keyserling),
new combination

Plate 2; Figures 421–426; Map 4

Epeira acuta Keyserling, 1865: 816, pl. 18, fig. 13, 14, ♀. Female holotype from New Granada [Spanish colony of Panama and Colombia] (BMNH), examined. Keyserling, 1893: 228, pl. 11, fig. 169, ♀.

Epeira rhodomelas Taczanowski, 1878: 147, pl. 1, fig. 3, ♀. Numerous syntypes from wasp nests from Amable María, Montana de Vitoc, [Dpto. Junín] Peru (PAN), examined. NEW SYNONYMY.

Aranea acuta:—Roewer, 1942: 836.

Aranea rhodomelas:—Roewer, 1942: 851.

Araneus acutus:—Bonnet, 1955: 420.

Araneus rhodomelas:—Bonnet, 1955: 586.

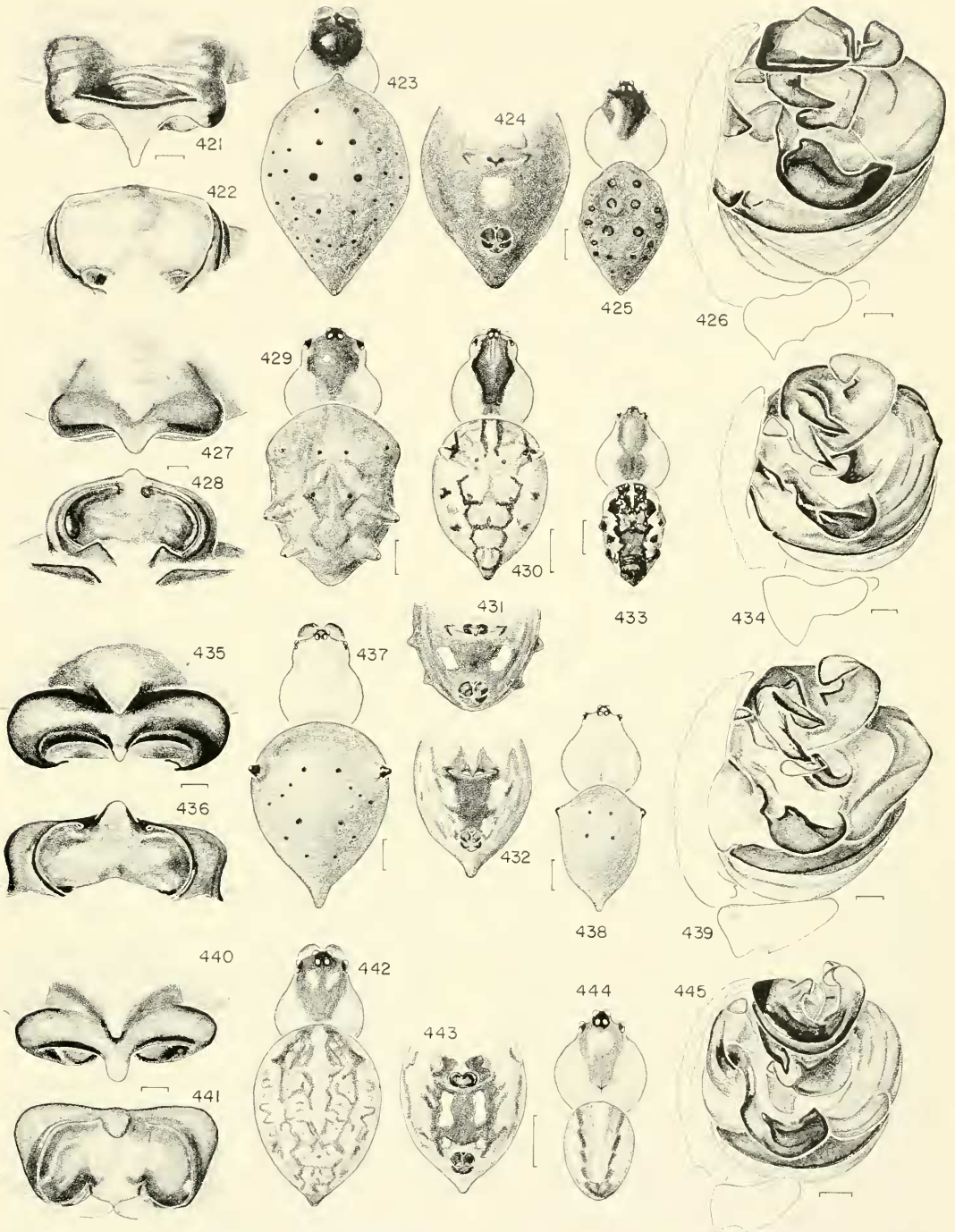
Note: Keyserling's single specimen has an all orange carapace.

Description. Female from Colombia. Carapace black, sides and posterior of carapace orange. Chelicerae, labium, endites black. Sternum orange. Legs black except coxae, trochanter and proximal ends of femora orange. Abdomen black with median ventral white spot (Fig. 424). Abdomen oval, pointed behind, with small anterior median hump (Fig. 423). Total length 9.4 mm. Carapace 3.5 long, 2.8 wide. First femur 2.6 mm; patella and tibia 3.1; metatarsus 1.9; tarsus 0.9. Second patella and tibia 2.8 mm; third 1.9; fourth 2.7.

Figures 421–426. *Alpaida acuta* (Keyserling). 421–424, female. 421, epigynum, ventral. 422, epigynum, posterior. 423, dorsal. 424, ventral. 425, 426, male. 425, dorsal. 426, left palpus.

Figures 427–434. *A. septemmammata* (O. P.—Cambridge). 427–432, female. 427, epigynum, ventral. 428, epigynum, posterior. 429, 430, dorsal. 431, 432, ventral. 429, 431, (Dpt. Valle, Colombia). 430, 432, (Costa Rica). 433, 434, male. 433, dorsal. 434, palpus.

Figures 435–439. *A. graphica* (O.P.—Cambridge). 435–437, female. 435, epigynum, ventral. 436, epigynum, posterior. 437, dorsal. 438, 439, male. 438, dorsal. 439, palpus.



Figures 440–445. *A. urucuca* n. sp. 440–443, female. 440, epigynum, ventral. 441, epigynum, posterior. 442, dorsal. 443, ventral. 444, 445, male. 444, dorsal. 445, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

Male from Colombia. Coloration as in female (Fig. 425). Structure as in female, except second tibiae thicker than first and with microsetae. Total length 7.4 mm. Carapace 3.4 long, 2.7 wide. First femur 2.7 mm; patella and tibia 3.4; metatarsus 2.0; tarsus 0.9. Second patella and tibia 2.7 mm; third 1.8; fourth 2.6.

Variation. Total length of females 9.0 to 12.5 mm, males 5.8 to 7.7. Panamanian specimens are the smallest, have yellow heads, and may lack the light ventral spot.

A female and a male from Puerto Lopez, Colombia, are described and illustrated.

Diagnosis. Most specimens can be separated by the coloration, the black head (Fig. 423) and white ventral spot on the abdomen (Fig. 424), and the large size. Females can be separated from those of *A. septemmammata* by the straight anterior edge of the lip of the epigynum (Fig. 421); males by the larger median apophysis and straight basal prong of the terminal apophysis of the palpus (Fig. 426).

Natural History and Distribution. The web (Plate 2) was made on a recently felled tree trunk; others on the same trunk had almost no mesh near the orb. The species is found in wet lowland forest from Panama to northern Argentina (Map 4).

Records. PANAMA *Panamá*: Canal area (common) (AMNH, MCZ). COLOMBIA *Magdalena*: Río Cordua, Sierra Madre de Santa Marta, 750 m (MNHNP); San Pablo, San Pedro, 670 m (MNHNP). *Santander*: Río Opón, 1,000 m (AMNH); Río Suárez, 800–1,000 m (AMNH, MCZ). *Boyacá*: Río Upia, 850–950 m (AMNH); Muzo (MCZ). *Meta*: 15 km SW Puerto López, 200 m (MCZ). ECUADOR *Napo*: Limóncocha, 240 m (MCZ, MECN). *Pastaza*: 11 km W Mera (CAS). *Morona-Santiago*: nr. General Plaza (Limón) (MCZ). PERU *Loreto*: Boquerón, 470 m (AMNH). *San Martín*: Hara, 32 km SE Moyobamba (AMNH). *Huánuco*: Tingo María, 670 m (AMNH); 69 km E Tingo María (CAS); Cord Azul, 1,400 m (AMNH). *Cuzco*: Chanchosmayo Valley (AMNH). BRAZIL *Amazonas*:

Manaus (MCZ). BOLIVIA *Santa Cruz*: Sara (MCZ). *Cochabamba*: Chapare, Río Chipiriri (IRSNB). ARGENTINA *Misiones*: Puerto Victoria (MNRJ).

Alpaida septemmammata

(O. P.-Cambridge),

new combination

Figures 427–434; Map 4

Epeira septemmammata O. P.-Cambridge, 1889: 42, pl. 7, fig. 6, ♀. Fifteen specimens from Teapa, Mexico (BMNH) examined, but type recorded as coming from Choctum, Guatemala, not located. Keyserling, 1892: 89, pl. 4, fig. 67, ♀.

Aranea septemmammata:—F. P.-Cambridge, 1904: 514, pl. 49, fig. 15, ♀. Roewer, 1942: 852.

Araneus septemmammatus:—Bonnet, 1955: 593.

Description. Female from Colombia. Carapace orange-yellow and brownish black. Chelicerae dark brown. Labium, endites black; sternum orange. Coxae black; legs black with yellow patches or rings. Dorsum of abdomen brownish black with indistinct pattern (Fig. 429); venter with one pair of white patches (Fig. 431). Abdomen with seven humps, covered by short hair (Fig. 429). Total length 7.4 mm. Carapace, 3.5 mm long, 2.9 wide. First femur 3.4 mm; patella and tibia 4.4, metatarsus 2.7; tarsus 1.1. Second patella and tibia 3.5 mm; third 2.5; fourth 3.5.

Male from Belize. Coloration as in female, but abdomen with more distinct pattern (Fig. 433); legs ringed. Second tibiae thicker than others. Abdomen with three pairs of lateral humps, anterior pair most dorsal. Total length 5.2 mm. Carapace, 2.5 mm long, 2.0 wide. First femur 2.2 mm; patella and tibia 2.5; metatarsus 1.5; tarsus 0.7. Second patella and tibia 2.0 mm; third 1.5; fourth 2.3.

Note. The sexes have been matched because of coloration and abdomen shape.

Variation. Total length of females from 4.9 to 8.1 mm, males from 3.6 to 5.5. The largest come from Argentina. Females may have pairs of large tubercles on the sides of the abdomen (Fig. 429), or may just have shoulder humps (Fig. 430). Some specimens have light coxae. Argentine fe-

males had only one pair of shoulder humps and the median apophysis of the palpus was proportionally slightly larger.

Figures 427 to 429 and the description are made from a female from Cali, Colombia (MCZ). The male illustrated and described came from Belize (MCZ).

Diagnosis. The posterior edge of the epigynum is nearly straight and has swollen lips, most pronounced on the sides (Fig. 427); the posterior median plate is oval (Fig. 428). The basal prong of the terminal apophysis on the palpus is pointed, with the distal lobe hanging over; the tegulum has a small lateral tubercle and the median apophysis is small (Fig. 434). The head is black, the sternum orange. While these characters separate the species from others in the northern part of the range, separation becomes difficult in South America with many similar species.

Records. MEXICO *Veracruz*: 0.5 km N of Sontecomapan, 21 Aug. 1967, ♀ (R. E. Leech, REL). *Chiapas*: Las Ruinas Palenque, July 1948, ♀ (C. Goodnight, AMNH). BELIZE 80 km S of Stann Creek, 2 June 1975, ♂ (W. Sedgwick, MCZ). COSTA RICA *Puntarenas*: Reserva Biologica Carara nr. Tárcoles, 28 July 1983, ♀ (H., L. Levi, W. Eberhard, MCZ); Corcovado-Sirena, Feb. 1984, ♂, Mar. 1984, 4♀ (W. Eberhard, MCZ). PANAMA *Veraguas*: Alto Limón Lo Yegueda, 11 Aug. 1984, ♀ (D. Quintero, MIUP). *Panamá*: Barro Colorado Island, Oct. 1975, ♀ (W. Eberhard, E-159, MCZ); France Field, Aug. 1973, ♂ (A. M. Chickering, MCZ); Villa Darién, Feb. 1984, 2♀ (M. N. García, MUIP). *Colón*: Guayabalito, Gatuncillo, Chagres River, 17 Aug. 1945, ♀ (E. Fichter, AMNH);

TRINIDAD Gasperee, Nov. 1944, ♀ (G. Donald, AMNH). VENEZUELA *Carabobo*: San Esteban, 26 Jan. 1940, ♂ (P. Andruze, AMNH). COLOMBIA *Magdalena*: San Pedro, Sierra Nevada de Santa Marta, 960 m, 19 May 1975, ♀ (J. A. Kochalka, MNHNP). *Valle*: nr. Cisneros, 500 m, Apr. 1976, ♀ (W. Eberhard 1092, MCZ); Querebral, 1,600 m, Aug. 1977, 6♀ (W. Eberhard E226, 1196, MCZ); Río Tuluá, 1,100

m, Aug. 1977, 2♀ (W. Eberhard, 1198, 1212, MCZ). ECUADOR *Pastaza*: 4.5 km N Puyo, 953 m, 9 Feb. 1955, ♀ (E. I. Schlinger, E. S. Ross, CAS). *Morona-Santiago*: Las Troyas, 29 July 1926, ♀ (MCZ). ARGENTINA *Misiones*: Gruta India, Ruta 12 Oct. 1977, 3♂, 2♀ (M. E. Galiano, MEG); Parque Nac. Iguazu, Oct. 1977, ♀ (M. E. Galiano, MEG).

Alpaida graphica (O. P.-Cambridge),
new combination

Plate 1; Figures 435–439; Map 4

Epeira graphica O. P.-Cambridge, 1889: 22, pl. 7, fig. 16, ♂. Male holotype from Bugaba [22 km NW David, Chiriquí], Panama (BMNH), examined. Keyserling, 1892: 121, pl. 6, fig. 89, ♂.

Aranea graphica:—F. P.-Cambridge, 1904: 518, pl. 51, fig. 2, ♂. Roewer, 1942: 843.

Araneus graphicus:—Bonnet, 1955.

Note. *Epeira graphica* of O. P.-Cambridge, 1889: pl. 7, fig. 16 and Keyserling, 1892, are not this species but are *A. acuta*. However, F. P.-Cambridge, 1904: 518, pl. 51, fig. 2, ♂ is this species.

Description. Female. Carapace, sternum orange. Chelicerae orange, black distally. Coxae orange with black patch. Legs black. Abdomen black. Posterior median eyes 0.8 diameter, lateral eyes 0.7 diameter of anterior medians. Anterior median eyes 0.6 diameter apart, posterior median eyes one diameter apart. Abdomen with pair of sclerotized shoulder tubercles and a median posterior hump (Fig. 437). Total length 9.0 mm. Carapace 3.6 mm long, 2.8 wide. First femur 3.4 mm; patella and tibia 3.9; metatarsus 2.4; tarsus 1.1. Second patella and tibia 3.1 mm; third 2.2; fourth 3.6.

Male. Coloration as in female except chelicerae, coxae all orange-yellow. Eyes slightly smaller than in female. Abdomen as in female (Fig. 438). Total length 6.5 mm. Carapace 3.1 mm long, 2.5 wide. First femur 3.1 mm; patella and tibia 3.6; metatarsus 2.1; tarsus 1.0. Second patella and tibia 2.7 mm; third 2.2; fourth 3.2.

Note. The male holotype is only 3.4 mm

total length, carapace 1.8 long, 1.6 wide; first patella and tibia, 2.1.

Variation. Females vary in total length from 7.7 to 9.0 mm, males from 3.4 to 6.5. A female and male from Quintana Roo (MCZ) are described and illustrated.

Diagnosis. Females are separated by the slightly sclerotized blunt shoulder tubercles, also present in the male (Figs. 437, 438). Unlike *A. septemmammata*, they have concave lips on the posterior margin of the epigynum, with the anterior and posterior margins of the lips parallel (Fig. 435). In posterior view, the lips are wider than those of *A. septemmammata* (Fig. 436). The male palpus differs by having a slight twist in the tegulum next to the median apophysis of the palpus (Fig. 439).

Natural History. The species is found in the forest in vertical webs, 50 cm to 1 m in diameter, which are built in small sink holes in the limestone. The spider rests in the hub and runs down the hub line when threatened (W. Maddison, personal communication).

Records. MEXICO *Quintana Roo*: Cobá [20°30'N; 87°44'W], 1 Feb. 1984, ♀, ♂ (V. B. Roth, MCZ); 31 km NE of Felipe, Carrillo Puerto [19°48'N; 87°52'W], 17 July 1983, ♀, 5 imm. (W. Maddison, R. S. Anderson, MCZ); 8 mi. NW of Tancan, Dos Bocas, 20 Nov. 1965, ♀ (J. G. Edwards, MCZ); Felipe Carrillo Puerto, 1 Aug. 1964, ♂ (J. C. Pallister, AMNH).

Alpaida urucuca new species

Figures 440–445; Map 4

Holotype. Female from Fazenda Antonio, Uruçuca, Bahia, Brazil, 24 Oct. 1979 (J. S. Santos, MCN no. 10972). The specific name is a noun in apposition after the locality.

Description. Female. Black patch containing two light spots on head; sides of the thorax yellow (Fig. 442). Chelicerae black distally. Sternum with four pairs of lateral white spots and median dark streak. Labium, endites, coxae light yellowish. Legs ringed black and light yellow. Dorsum of abdomen dusky yellowish with black pattern (Fig. 442), sides with white

and black pigment, venter black with pair of white exclamation marks (Fig. 443). Abdomen pointed behind, no shoulder humps (Figs. 442). Total length 4.8 mm. Carapace 2.1 mm long, 1.5 wide. First femur 1.6 mm; patella and tibia 2.0; metatarsus 1.3; tarsus 0.7. Second patella and tibia 1.8 mm; third 1.2; fourth 1.9.

Male. Coloration as in female, except abdomen with more white pigment dorsally. Anterior median eyes 0.5 diameter apart, posterior median eyes 0.7 diameter apart. Total length 3.7 mm. Carapace 1.9 mm long, 1.7 wide. First femur 1.6 mm; patella and tibia 2.1; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.6 mm; third 1.2; fourth 1.8.

Diagnosis. Females are distinguished from those of *A. graphica* and *A. septemmammata* by the lack of shoulder humps and, in posterior view of the epigynum, wider lips ventrally (Fig. 441). Unlike those of the other two species, the males lack the basal prong of the median apophysis of the palpus (Fig. 445).

Paratype. BRAZIL *Bahia*: Fazenda Almada, Uruçuca, 27 Nov. 1977, ♂ (J. S. Santos, MCN 11159).

Alpaida championi (O. P.-Cambridge), new combination

Plate 2; Figures 446–451; Map 4

Epeira championi O. P.-Cambridge, 1889: 42, pl. 5, figs. 12, 13, ♀, ♂. Female, male syntypes from Bugaba, Panama (BMNH), lost.

Epeira aestimabilis Keyserling, 1892: 181, pl. 9, fig. 133, ♀. Female from Guatemala (BMNH), examined. NEW SYNONYMY.

Araneus championi:—F. P.-Cambridge, 1904: 517, pl. 50, figs. 1, 2, ♀, ♂. Bonnet, 1955: 457.

Aranea aestimabilis:—Roewer, 1942: 836.

Aranea championi:—Roewer, 1942: 839.

Araneus aestimabilis:—Bonnet, 1955: 425.

Note. The black underside of the abdomen and the projecting terminal apophysis of the male are illustrated by O. P.-Cambridge.

Description. Female from Costa Rica. Carapace yellowish. Labium, endites black. Sternum yellowish. Legs with black coxae,

yellowish femora, distal articles brown to black. Dorsum of abdomen with white longitudinal bands and white marks in middle (Fig. 448); venter black (Fig. 449). Abdomen elongate, oval. Total length 5.0 mm. Carapace 1.8 mm long, 1.5 mm wide. First femur 2.4 mm; patella and tibia 2.7; metatarsus 1.8; tarsus 0.8. Second patella and tibia 2.3 mm; third 1.5; fourth 2.3.

Male. Coloration as in female (Fig. 450). Shape of abdomen as in female. Total length 3.4 mm. Carapace 1.8 mm long, 1.5 mm wide. First femur 2.1 mm; patella and tibia 2.4; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.8 mm; third 1.2.

Variation. Females vary in total length from 3.6 to 5.0 mm, males from 3.1 to 3.5. The female and male described and illustrated came from Costa Rica.

Diagnosis. Females are distinguished from those of *A. xavantina* by the abdominal markings (Figs. 448, 449) and from *A. tuonabo* by the small lobe and anterior notch of the epigynum (Fig. 446). The males are distinguished from *A. xavantina* and *A. tuonabo* by the round, lobed median apophysis (Fig. 451).

Natural History and Distribution. The species is found in lowland forest near water in Costa Rica. The web is illustrated (Plate 2). It is found from Guatemala to southern Colombia and is most common in Costa Rica (Map 4).

Records. COSTA RICA *Heredia:* La Selva nr. Puerto Viejo, Jan. 1978, ♀, June 1982, ♂, ♀, 14 Jan. 1984, ♀ (W. Eberhard, MCZ). *Cartago:* Turrialba, May 1944, 2♀ (F. Schrader, AMNH). *San José:* San Isidro del General, 2♀, 3♂ (D. Rounds, MCZ). *Puntarenas:* Reserva Biologica Carara nr. Tárcoles, 28 July 1983, 3♀ (H. W. Levi, W. Eberhard, MCZ), Aug. 1983, ♀ (W. Eberhard, MCZ); 6 km S San Vito, 08°42'N, 83°00'W, Mar. 1967, ♀ (OTS, MCZ); Parque Nac. Corcovado, Horona, 20 Aug. 1978, ♂, ♀ (Y. D. Lubin, MCZ); Osa Peninsula, 2.5 mi SW Rincon, 1967, ♀ (OTS, MCZ); Osa Peninsula, Sirena, Feb. 1984, ♀ (W. Eberhard, MCZ). COLOMBIA *Nariño:* La Planada, 1,800 m, 7 km S Cho-

conés, nr. Ricaurte, July 1986, ♀ (W. Eberhard, MCZ).

Alpaida xavantina new species
Figures 452–457; Map 4

Holotype. Male holotype and female paratype from 12°49'S, 51°46'W, 260 km N of Xavantina, 400 m, cerrado shrub, Est. Mato Grosso, Brazil, Feb.–Apr. 1969, (Xavantino-Cachimbo Expedition, ex MCZ, MZSP). The specific name is a noun in apposition after the locality.

Description. Female. Carapace light yellowish with white pigment spot in center of thorax. Labium, sternum, endites black. Coxae and legs yellowish. Abdomen with white pigment patches on dorsum (Fig. 454), sides with a wide white band; venter black with two parallel white pigment lines, white behind spinnerets (Fig. 455). Abdomen oval, pointed behind (Fig. 454). Total length 4.0 mm. Carapace 1.4 mm long, 1.1 wide. First femur 1.6 mm; patella and tibia 1.7; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.4 mm; third 0.9; fourth 1.2.

Male. Coloration as in female (Fig. 456). Second tibia not swollen, without macrosetae. Total length 3.4 mm. Carapace 1.5 mm long, 1.3 wide. First femur 1.6 mm; patella and tibia 1.8; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.4 mm; third 0.8; fourth 1.3.

Variation. Males vary from 3.0 to 3.4 mm. The male holotype and a female collected with it are described and illustrated.

Diagnosis. Females differ from those of *A. championi* by the oval shape of the abdomen (Fig. 454) and by the larger median plate in posterior view (Fig. 453). The male differs from those of *A. championi* by the oval median apophysis (Fig. 457) and from this and other *Alpaida* by the S-curved embolus and the sculpturing of the terminal apophysis (Fig. 457).

Natural History. Specimens have been found in cerrado shrub in Mato Grosso.

Paratypes. BRAZIL *Pará:* Belém, Aug. 1971, ♂ (M. E. Galiano, MACN 8418). *Mato Grosso:* 260 km N of Xavantina, Feb.–Apr. 1969, ♂ (Xavantino-Cachimbo Exp., MCZ).

Alpaida tayos new species
 Figures 458–467; Map 4

Holotype. Female from Los Tayos-Santiago, banana plantation, 3°04'S, 78°02'W Prov. Morona-Santiago, Ecuador, 3 Aug. 1976 (MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, yellowish, rims of thorax dusky. Labium, endites, sternum, black. Coxae, legs, dusky yellowish. Dorsum of abdomen white, posterior tip black (Figs. 462, 463); sides dusky; venter black (Fig. 465). Abdomen oval, pointed behind (Figs. 462, 463). Total length 3.7 mm. Carapace 1.5 mm long, 1.0 wide. First femur 1.7 mm; patella and tibia 1.8; metatarsus 1.2; tarsus 0.7. Second patella and tibia 1.5 mm; third 0.9; fourth 1.3.

Male. Coloration as in female, except dorsum of abdomen darker on sides (Fig. 466). Lateral eyes 0.8 diameter of median eyes. Anterior median eyes slightly less than their diameter apart; posterior medians their diameter apart. Second tibiae not thicker than first. Total length 3.1 mm. Carapace 1.5 mm long, 1.3 wide. First femur 1.6 mm; patella and tibia 1.8; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.4 mm; third 0.9; fourth 1.3.

Variation. Total length of females from 3.1 to 4.5 mm, males from 2.7 to 3.4 mm. The distance of the median notch of the epigynum from its posterior margin seems variable.

The female holotype is described and illustrated (Figs. 458, 459, 462, 465) and a male from Dpto. Huánuco, Peru (AMNH).

Diagnosis. Females differ from those of *A. championi* by the oval shape and coloration of the abdomen (Figs. 462–464) and from those of both *A. championi* and

A. xavantina by the straighter posterior edge of the epigynum (Fig. 458) and its oval posterior median plate (Fig. 459). The males differ from those of *A. xavantina* by having a much thicker basal prong on the terminal apophysis and by the larger conductor (Fig. 467).

Natural History and Distribution. A female has been collected from a banana plantation. The species is found from Ecuador to Pará state, Brazil (Map 4).

Paratypes. GUYANA *Bartica Distr.:* Kartabo 1922, 1924, 2♀ (AMNH). EC-UADOR *Napo:* headwaters of Río Arajuño, 1,000 m, 28 Apr. 1938, ♀ (W. Clarke-Macintyre, AMNH). PERU *Huánuco:* Tingo María, 8 Oct. 1946, ♀; 21 Nov. 1946, ♂; 19–25 May 1947, ♂, ♀ (J. C. Pallister, AMNH, MCZ). *Madre de Dios:* Puerto Maldonado, 100 m, 16–23 Apr. 1947, ♂ (J. C. Pallister, AMNH). BRAZIL *Pará:* Marituba, Ananindeua, Nov. 1963, ♀ (M. Oliveira, P. Wygodzinsky, AMNH); Canindé, Rio Gurupi, Apr. 1963, ♀ (B. Malkin, AMNH).

Alpaida nancho new species
 Figures 468–471; Map 4

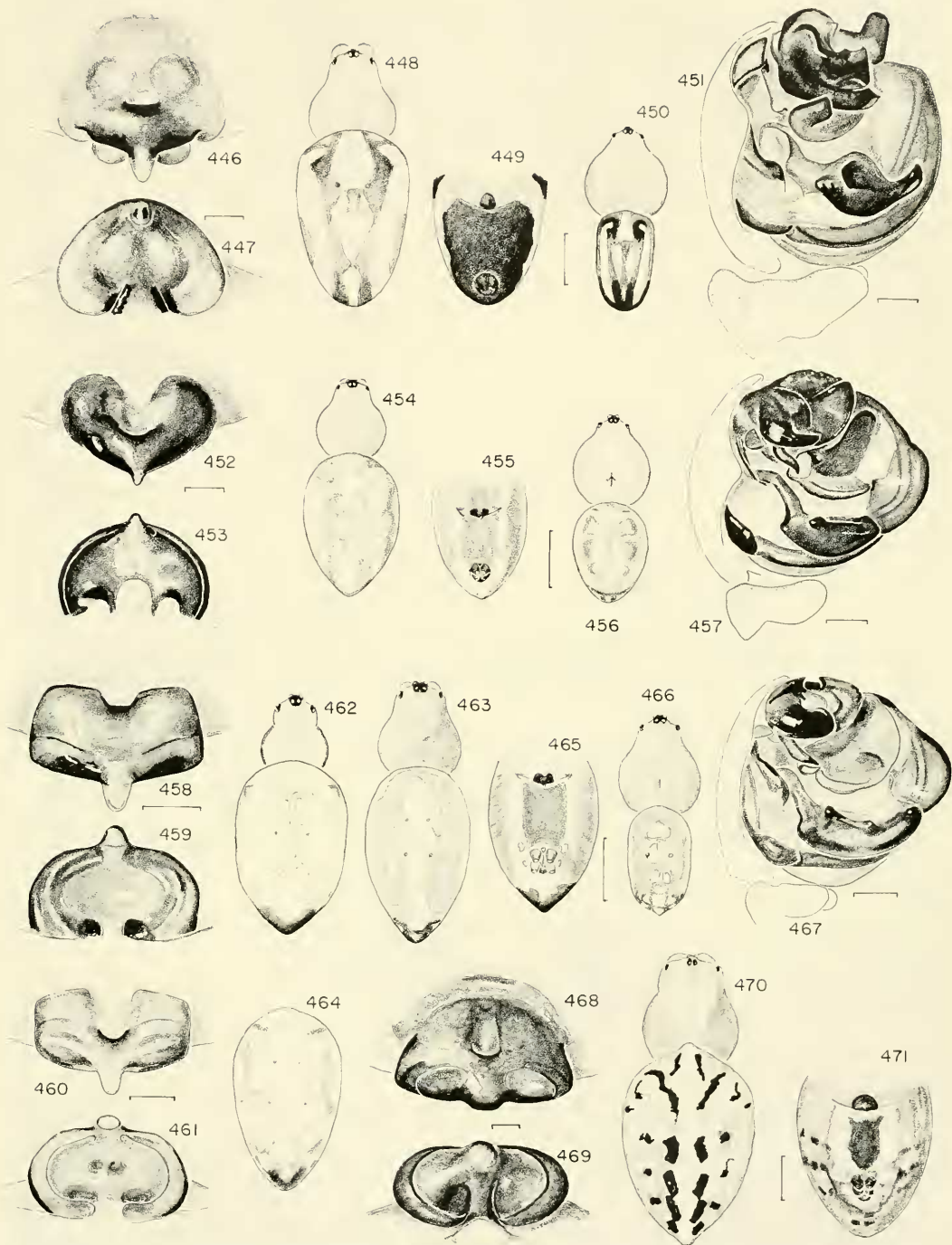
Holotype. Female from Montaña de Nancho, 3,000 m, Dpto. Cajamarca, Peru (K. Jelski, J. Sztolcman, PAN). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum orange. Legs orange, distal ends of articles with thin black rings. Dorsum of abdomen with median white band bordered by small paired black patches (Fig. 470); venter with black rectangular patch framed by white (Fig. 471). Carapace with slight white pubescence. Abdomen pointed behind, with small anterior median

Figures 468–471. *A. nancho* n. sp., female. 468, epigynum, ventral. 469, epigynum, posterior. 470, dorsal. 471, ventral.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

Figures 446–451. *Alpaida championi* (O. P.–Cambridge). 446–449, female. 446, epigynum, ventral. 447, epigynum, posterior. 448, dorsal. 449, ventral. 450, 451, male. 450, dorsal. 451, left palpus.



Figures 452-457. *A. xavantina* n. sp. 452-455, female. 452, epigynum, ventral. 453, epigynum, posterior. 454, dorsal. 455, ventral. 456, 457, male. 456, dorsal. 457, palpus.

Figures 458-467. *A. tayos* n. sp. 458-465, female. 458, 460, epigynum, ventral. 459, 461, epigynum, posterior. 458, 459, (Ecuador). 460, 461, (Peru). 462-464, dorsal. 465, ventral. 466, 467, male. 466, dorsal. 467, palpus.

hump (Fig. 470). Total length 6.5 mm. Carapace 2.4 mm long, 2.0 wide. First femur 1.9 mm; patella and tibia 2.3; metatarsus 1.3; tarsus 0.6. Second patella and tibia 2.0 mm; third 1.4; fourth 2.0.

Diagnosis. The concavely curved lips of the epigynum, which expose the posterior median plates on each side in ventral view, and the anterior position of the notch, are diagnostic (Fig. 468).

Alpaida delicata (Keyserling),
new combination

Figures 472–478; Map 5

Epeira delicata Keyserling, 1892: 183, pl. 9, fig. 135, ♀, ♂. Six female, four male syntypes from Espírito Santo, Brazil (BMNH), examined.

Araneus taczanowskii Simon, 1897b: 473. Female holotype from Tefé, Est. Amazonas, Brazil (MNHN), examined. Bonnet, 1955: 609. NEW SYNONYMY.

Aranea delicata:—Roewer, 1942: 840.

Aranea taczanowski:—Roewer, 1942: 853.

Araneus delicatus:—Bonnet, 1955: 485.

Description. Female. Carapace light orange, darker in center. Sternum, legs light orange. Dorsum of abdomen with white and black marks (Fig. 474); venter without pigment. Carapace with few setae in center of thorax. Abdomen with a median anterior hump and a pair of posterior humps (Fig. 474). Total length 5.0 mm. Carapace 2.1 mm long, 1.5 wide. First femur 2.3 mm; patella and tibia 2.8; metatarsus 2.1; tarsus 0.9. Second patella and tibia 2.5 mm; third 1.5; fourth 2.4.

Male. Coloration as in female (Fig. 476). Posterior median eyes, lateral eyes each 0.8 diameter of anterior median eyes. Anterior median eyes half their diameter apart, posterior median eyes 0.6 their diameter apart. Second tibiae widest at tibial tarsal joint, with strong pairs of macrosetae. First tibiae also with pair of macrosetae on distal end (Fig. 478). Abdomen as in female (Fig. 476). Total length 5.4 mm. Carapace 2.4 mm long, 1.9 wide. First femur 3.3 mm; patella and tibia 4.1; metatarsus 3.2; tarsus 1.1. Second patella and tibia 3.3 mm; third 2.1; fourth 3.2.

Note. Cymbium lacks tarsal organ al-

ways present in metids. One male lacks palpal tarsi on both palpi as do some *Herennia* males in Papua New Guinea, which defend their mated females from other males.

Variation. Total length of females from 4.7 to 6.0 mm, males 3.9 to 5.4. The length of the palpal tibia varies from just longer than wide to longer than the tarsal cymbium (Fig. 477).

A female from Tefé (MCZ) and a male from Mato Grosso (AMNH) are described and illustrated.

Diagnosis. The female is distinguished from all *Alpaida* except *A. truncata* by two black humps on the truncate posterior end of the abdomen (Fig. 474); it differs from *A. truncata* by its smaller size and the shape of the epigynum, which has a curved posterior margin and a small median knob (Fig. 472). The male differs from all other *Alpaida* males by having the palpal tibia as long as wide to longer than the cymbium (Fig. 477).

Records. PERU *Ucayali*: Colonia Calleria, Río Calleria, 15 km from Ucayali, Sept., Oct. 1961, ♂, ♀ (B. Malkin, AMNH). BRAZIL *Amazonas*: Tefé, Nov., Dec. 1919, 5♀, ♂ (H. S. Parrish, MCZ). *Pará*: Jacazeacanga, Oct. 1959, ♂ (M. Alvarenga, AMNH). *Mato Grosso*: [no locality] Oct. 1976, 2♀, 3♂ (M. Alvarenga, AMNH). BOLIVIA [?] General Roman, Feb. 1952, ♀ (Martinez, MLP).

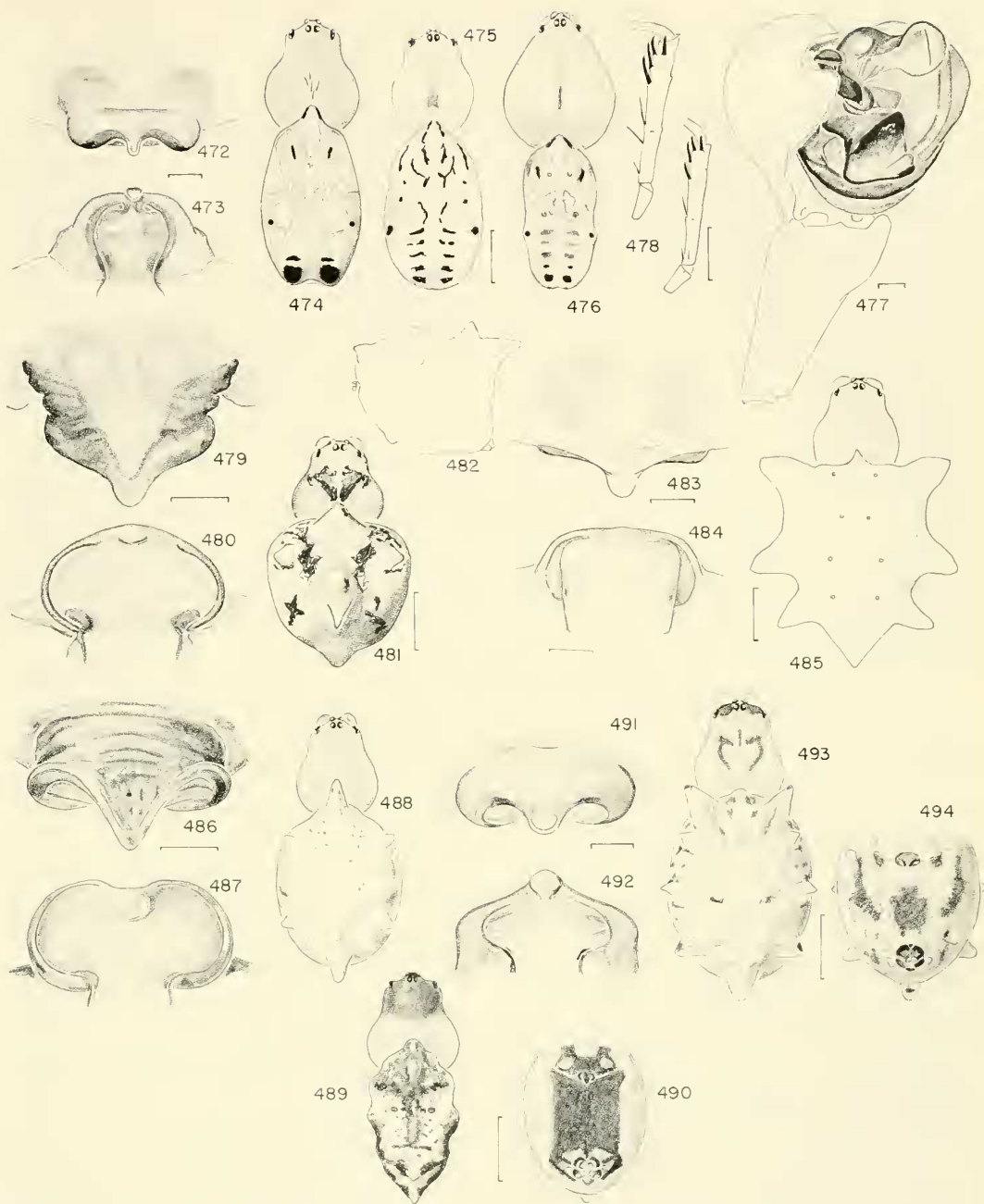
Alpaida atomaria (Simon),
new combination

Figures 479–482; Map 5

Salassina atomaria Simon, 1895: 781. Two female syntypes from Tijuca, Rio de Janeiro, Brazil (MNHN no. 8515), examined.

Edricus atomarius:—Roewer, 1942: 761. Bonnet, 1956: 1648.

Description. Female. Carapace brown, two black patches in thoracic region (Fig. 481). Legs yellow-brown with faint rings on venter. Dorsum of abdomen with paired black spots and numerous small white pigment spots (Fig. 481); venter without pigment in center; a black patch on each side;



Figures 472–478. *Alpaida delicata* (Keyserling). 472–475, female. 472, epigynum, ventral. 473, epigynum, posterior. 474, 475, dorsal. 476–478, male. 476, dorsal. 477, left palpus. 478, left first and second tibiae, ventral.

Figures 479–482. *A. atomaria* (Simon), female. 479, epigynum, ventral. 480, epigynum, posterior. 481, dorsal. 482, lateral.

Figures 483–485. *A. octolobata* n. sp., female. 483, epigynum, ventral. 484, epigynum, posterior. 485, dorsal.

Figures 486–490. *A. ericae* n. sp., female. 486, epigynum, ventral. 487, epigynum, posterior. 488, 489, dorsal. 490, ventral.

Figures 491–494. *A. yucuma* n. sp., female. 491, epigynum, ventral. 492, epigynum, posterior. 493, dorsal. 494, ventral.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

spinnerets dark brown. Anterior median eyes are 1.5 diameters apart, posterior medians 1.2 diameters apart. Abdomen with one anterior median and two posterior median humps, and a pair of lateral humps (Figs. 481, 482). Total length 4.0 mm. Carapace 1.6 mm long, 1.3 wide. First femur 1.7 mm; patella and tibia 1.8; metatarsus 1.1; tarsus 0.6. Second patella and tibia 1.6 mm; third 0.8; fourth 1.6.

Variation. Total length of the females available varies from 2.9 to 4.9 mm.

Diagnosis. The female is distinguished by the markings on the thorax and the humps on the abdomen (Figs. 481, 482), and by the epigynum, which has a median lobe whose margins continue posteriorly into the posterior margin of the lips, and the dark sides and spherical seminal receptacles visible anteriorly (Fig. 479).

Record. BRAZIL *Rio de Janeiro*: Represa Rio Grande, [22°55'S, 43°25'W] Feb. 1976, ♀ (M. Alvarenga, AMNH).

Alpaida octolobata new species
Figures 483–485; Map 5

Holotype. Female holotype and one female and one immature paratype from Montenegro, Rio Grande do Sul, Brazil, 15 Dec. 1977 (A. A. Lise, MCN no. 07513). The specific name is a descriptive adjective.

Description. Female. Carapace, sternum and legs yellowish white. Dorsum of abdomen with small white pigment spots, densest on venter around sides. Abdomen with three pairs of lobes, and an anterior and posterior median lobe (Fig. 485). Total length 5.7 mm. Carapace 2.1 mm long, 1.7 wide. First femur 3.1 mm; patella and tibia 3.1; metatarsus 2.1; tarsus 0.8. Second patella and tibia 2.7 mm; third 1.7; fourth 2.5.

Diagnosis. The weakly sclerotized epigynum with dark posterior edge and small lobe in ventral view (Fig. 483); in posterior view the lip widens dorsally on each side (Fig. 484).

Paratype. BRAZIL *Bahia*: Fazenda Nossa Senhora das Neves, Itamaraju, 7 Aug. 1978, ♀ (J. S. Santos, MCN 11074).

Alpaida ericae new species
Figures 486–490; Map 5

Holotype. Female from Montenegro, Rio Grande do Sul, Brazil, 17 Oct. 1977 (E. H. Buckup, MCN no. 7268). The species is named after the collector.

Description. Female. Carapace light orange-yellow. Labium, sternum, endites, black. Coxae orange-yellow; legs light orange-yellow with patches on venter. Dorsum of abdomen with white pigment and dusky markings (Figs. 488, 489); sides white; venter black (Fig. 490). Anterior median eyes more than one; posterior median eyes more than 1.5 diameters apart. First femora with two prolateral macrosetae. Abdomen with four pairs of lateral humps, one anterior and two median posterior (Figs. 488, 489). Total length 4.2 mm. Carapace 1.5 mm long, 1.2 wide. First femur 1.5 mm; patella and tibia 1.8; metatarsus 1.0; tarsus 0.5. Second patella and tibia 1.5 mm; third 1.0; fourth 1.4.

Variation. Total length of females varies from 3.7 to 4.7 mm. Some females have black heads; some have less distinct humps than the one illustrated (Figs. 488, 489).

Diagnosis. Unlike other *Alpaida*, the median lobe of the epigynum is large, wider than each side lobe (Fig. 486).

Paratypes. BRAZIL *Rio Grande do Sul*: Montenegro, 6 Oct. 1977, ♀ (A. A. Lise, MCN), 3 Nov. 1977, ♀ (E. H. Buckup, MCN 7149); Passo do Inferno, São Francisco de Paula, 20 Apr. 1979, ♀ (A. A. Lise, MCN 8554). ARGENTINA *Buenos Aires*: Isla Martín García, Río de la Plata, 2 Dec. 1965, ♀ (M. E. Galiano, MEG).

Alpaida yucuma new species
Figures 491–494; Map 5

Holotype. Female from Salto do Yucumã, Parque Estadual do Turvo, Tenente Portela, Rio Grande do Sul, Brazil (A. A. Lise, MCN no. 12855). The specific name is a noun in apposition after the locality.

Description. Female. Carapace off-white with black marks (Fig. 493) and a black patch on each side between median and lateral eyes. Sternum off-white. Legs

off-white with longitudinal indistinct dusky marks. Dorsum of abdomen white with indistinct dusky marks (Fig. 493); venter with black patch in middle, black patches on sides; spinnerets black (Fig. 494). Abdomen slightly longer than wide with four pairs of lateral humps, the second small, a small anterior median hump and a larger median posterior (Fig. 493). Total length 4.7 mm. Carapace 1.7 mm long, 1.3 wide. First femur 1.5 mm; patella and tibia 1.7; metatarsus 0.9; tarsus 0.5. Second patella and tibia 1.4 mm; third 0.9; fourth 1.5.

Diagnosis. Female is distinguished by the black marks between median and lateral eyes and the small rounded lobe between concave posterior margins of the epigynum (Fig. 491).

Alpaida rosa new species
Figures 495–500; Map 5

Holotype. Female holotype and one female paratype from Santa Rosa, Rio Grande do Sul, Brazil, 2 Jan. 1984 (A. D. Brescovit, MCN no. 11916). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellowish with a black patch on each side of head (Fig. 497). Labium, sternum black. Endites with black patch. Legs yellowish. Dorsum of abdomen white with paired black spots (Fig. 497); venter black with white on each side (Fig. 498). Anterior median eyes their diameter apart; posterior median eyes 0.7 diameter apart. Abdomen pointed behind. Total length 4.2 mm; carapace 1.7 mm long, 1.3 wide. First femur 1.5 mm; patella and tibia 1.7; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.5 mm; third 1.1; fourth 1.6.

Male. Coloration as in female. Anterior median eyes 0.6 their diameter apart; posterior median eyes 0.7 their diameter apart. Second tibiae with macrosetae. Total length 3.1 mm. Carapace 1.5 mm long, 1.3 wide. First femur 1.5 mm; patella and tibia 1.8; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.3 mm; third 0.9; fourth 1.6.

Variation. Females vary in total length

from 4.2 to 5.6 mm. The female holotype and a male from Salta Prov., Argentina are described and illustrated.

Diagnosis. The females are distinguished from all other *Alpaida* by the parallel sides of the lobe of the epigynum and, in ventral view of the posterior median plate, by two sets of lips, one inside the other's convex curve (Fig. 495). In posterior view there are also two lips, an outer one, and an inner one that coils posteriorly (Fig. 496). The male is distinguished by the wide basal prong and the two distal tips of the terminal apophysis (Fig. 500).

Paratypes. BRAZIL *Rio Grande do Sul*: Salto do Jacui, Espumoso, 14 Jan. 1982. ♀ (A. A. Lise, MCN 9987). ARGENTINA *Misiones*: Parque Nac. Iguazu, Jan. 1966, ♀ (M. E. Galiano, MACN 8420); Eldorado, 1964, ♀ (A. Kovacs, AMNH). *Salta*: Orán, 8 Dec. 1950, 2♀ ♂ (M. Biraben, MLP).

Alpaida calotypa (Chamberlin),
new combination
Figures 501–505; Map 5

Epeira nigropunctata Taczanowski, 1878: 167, pl. 2, fig. 17, ♀. Female lectotype here designated and five juvenile paralectotypes from Paltaypampa [1,860 m, Junín, prov. Tarma], female paralectotype from Uaca Pistana [?], one male, two female paralectotypes from Pumamarca [1,900 m, Junín, prov. Tarma], Peru (PAN), examined. (Name preoccupied by *E. nigropunctata* L. Koch, 1871.)
Aranea calotypa Chamberlin, 1916: 256, pl. 19, fig. 4, ♂. Male holotype from Lucma, 7,000 ft. [2,000 m, Dpto. Cuzco], Peru (MCZ), examined. Roewer, 1942: 838, NEW SYNONYMY.

Aranea nigropunctatula Roewer, 1942: 848. New name since *Epeira nigropunctata* is preoccupied by L. Koch, 1871.

Araneus calotypus:—Bonnet, 1955: 450.

Araneus nigropunctatus:—Bonnet, 1955: 550.

Note. The description of Taczanowski is based on several specimens from different localities and is a mixture of species. Each locality vial had a different species. The choosing of the lectotype was in part arbitrary, in part it matched Taczanowski's illustration. Also the lectotype comes from the first locality mentioned by Taczanowski.

Description. Female. Carapace, sternum, legs yellow-white. Dorsum of abdomen white with two black spots at posterior end (Fig. 503) and about two tiny black spots on humps on each side, two anterior, two posterior; venter with scattered white pigment spots. Anterior median eyes one diameter apart, posterior medians 1.5 diameters apart. Abdomen longer than wide with anterior median hump and slight humps on each side each bearing a black spot, sides with indistinct grooves (Fig. 503). Total length 5.5 mm. Carapace 2.6 mm long, 2.0 wide. First femur 2.2 mm; patella and tibia 2.6; metatarsus 1.6; tarsus 0.7. Second patella and tibia 2.2 mm; third 1.4; fourth 2.2.

Male. Coloration as in female (Fig. 504). Anterior median eyes largest, posterior medians 0.8 diameter of anterior medians, laterals both about 0.7 diameter of anterior medians. Anterior medians their diameter apart, posterior medians 1.3 their diameters apart. Second tibiae swollen and with macrosetae. Abdomen oval. Total length 4.5 mm. Carapace 2.4 mm long, 2.1 wide. First femur 2.2 mm; patella and tibia 2.7; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.6 mm; third 1.4; fourth 2.0.

Variation. Total length of females varies from 5.5 to 8.5 mm, males from 4.5 to 5.7. Females from Tingo María have the scape of the epigynum broken off and have a wider abdomen with shoulder humps and a lateral dark line. They may belong to a different species. Females from Ollanta, Cuzco, also have the tips broken off and are the largest specimens; they also have

a dusky line through the median of the carapace.

The female lectotype and a male paralectotype are described and illustrated.

Diagnosis. In ventral view the epigynum has a long scape containing a deep notch; the bulge of the posterior median plate shows on each side (Fig. 501). Males are distinguished by having two equal-sized, curved hooks on the terminal apophysis and a blunt curved lobe on the median apophysis (Fig. 505).

Records. PERU *Huánuco*: Tingo María, 25 May 1947, ♀, imm. (J. C. Pallister, AMNH). *Cuzco*: Ollanta, 6 June 1961, 2♀ (N. L. H. Kraus, AMNH); Río Tinccochocha, Aug. 1911, ♂ paratype of *calotypa* (Yale Peruvian Exped., MCZ); below Lucma, 2,000 m, 25 Aug. 1911, ♂ (Yale Peruvian Exped., MCZ). [?] Palatayoc, ♂, ♀ (K. Jelski, J. Stolcman, PAN).

Alpaida conica O. P.-Cambridge Figures 506–511; Map 5

Alpaida conica O. P.-Cambridge, 1889: 53, pl. 4, fig. 3, ♀. Female holotype from Bugaba, Panama, (BMNH) examined. Keyserling, 1893: 281, pl. 14, fig. 207, ♀. Bonnet, 1955: 267.

Araña conica:—F. P.-Cambridge, 1904: 519.

Araña coniformis:—Roewer, 1942: 839. New name for *A. conica* (thought preoccupied by *Araña conica* Pallas).

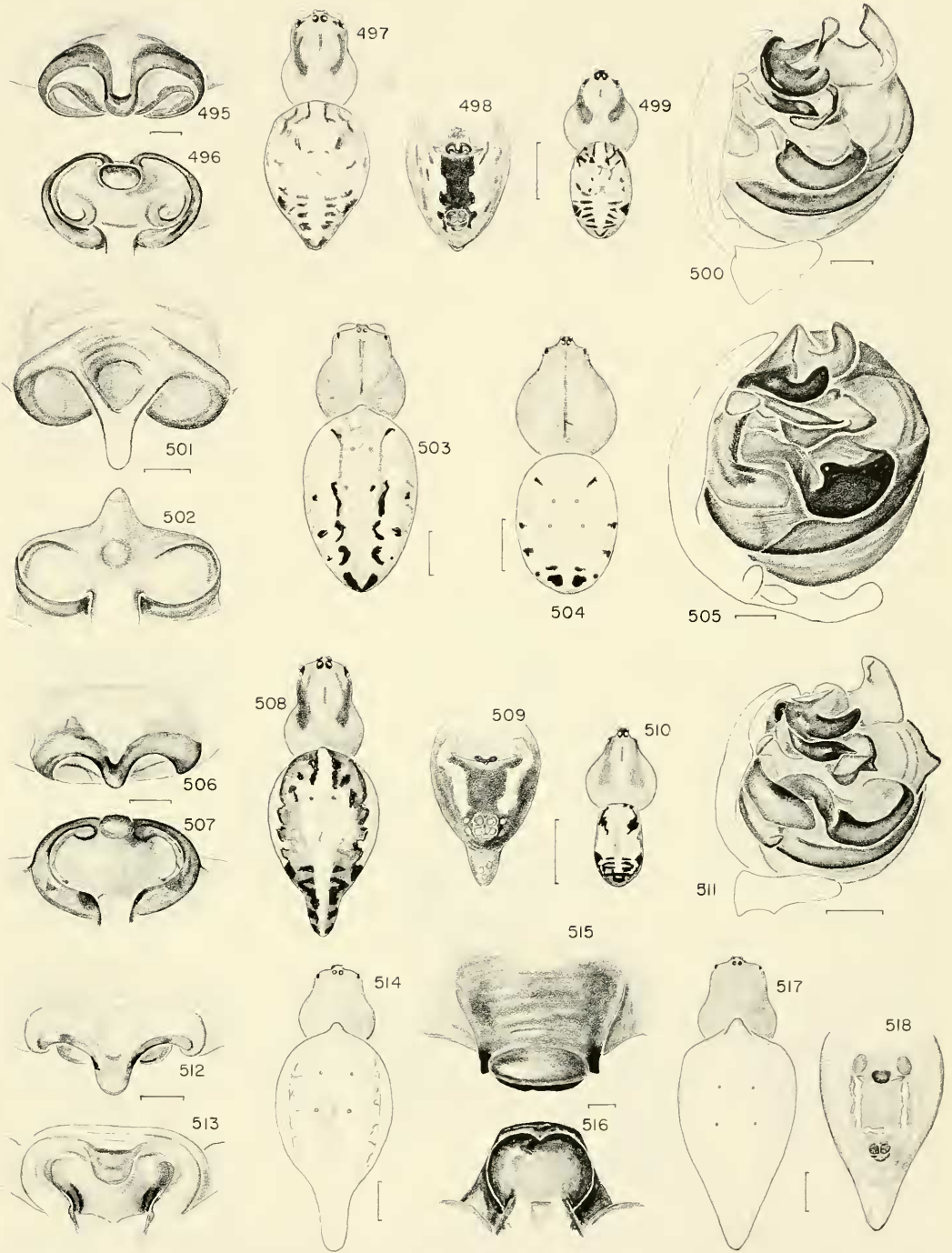
Description. Female. Carapace orange yellow with black patch on each side (Fig. 508). Labium, sternum black; endites, yellow. Legs dusky yellow. Dorsum of abdomen with median white longitudinal line bordered by paired lateral black and dusky patches (Fig. 508); sides dorsally a white

Figures 495–500. *Alpaida rosa* n. sp. 495–498, female. 495, epigynum, ventral. 496, epigynum, posterior. 497, dorsal. 498, ventral. 499, 500, male. 499, dorsal. 500, left palpus.

Figures 501–505. *A. calotypa* (Chamberlin). 501–503, female. 501, epigynum, ventral. 502, epigynum, posterior. 503, dorsal. 504, 505, male. 504, dorsal. 505, palpus.

Figures 506–511. *A. conica* O. P.-Cambridge. 506–509, female. 506, epigynum, ventral. 507, epigynum, posterior. 508, dorsal. 509, ventral. 510, 511, male. 510, dorsal. 511, palpus.

Figures 512–514. *A. gracia* n. sp., female. 512, epigynum, ventral. 513, epigynum, posterior. 514, dorsal.



Figures 515-518. *A. costai* n. sp., female. 515, epigynum, ventral. 516, epigynum, posterior. 517, dorsal. 518, ventral. Scale lines. 1.0 mm; genitalia, 0.1 mm.

longitudinal band, posterior to it a round black patch, ventrally a dusky band; venter black with white line on each side (Fig. 509) dusky behind spinnerets. Chelicerae with three anterior and three posterior teeth. Abdomen oval with narrow posterior cone (Fig. 508). Total length 4.4 mm. Carapace 1.6 mm long, 1.2 wide. First femur 1.4 mm; patella and tibia 1.7; metatarsus 0.9; tarsus 0.5. Second patella and tibia 1.5 mm; third 0.9; fourth 1.5.

Male. Coloration as in female. Abdomen oval with posterior median hump (Fig. 510). Total length 2.4 mm. Carapace 1.3 mm long, 1.1 wide. First femur 1.2 mm; patella and tibia 1.5; metatarsus 0.8; tarsus 0.5. Second patella and tibia 1.2 mm; third 0.8; fourth 1.1.

Variation. Total length of males varies from 2.4 to 2.9 mm.

A female and male (MCZ) are described and illustrated.

Diagnosis. The female differs from sympatric species of *Alpaida* by the shape of the abdomen, the lack of shoulder humps and a tail posterior to spinnerets (Fig. 508). The male differs by a thorn on the corner of the median apophysis closest to the radix and by the curved basal hook and distal extension of the terminal apophysis (Fig. 511).

Records. PANAMA *Panamá*: Summit Park, 27 Dec. 1957, ♂ (A. M. Chickering, MCZ); Forest Preserve, 25 July 1954, ♀ (A. M. Chickering, MCZ); Balboa, 17 Aug. 1936, ♂ (A. M. Chickering, MCZ).

Alpaida gracia new species Figures 512–514; Map 5

Holotype. Female from Alta Gracia, Prov. Córdoba, Argentina, Feb. 1934 (C. Bruch, MACN no. 8489). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, legs, orange-yellow. Dorsum of abdomen white with two longitudinal bands of denser white pigment (Fig. 514); venter white. Abdomen elongate with anterior median hump and long tail (which is damaged in holotype specimen); length of abdomen posterior to spinnerets more than twice the distance from spinnerets to epigynum. Total length 6.5 mm. Carapace 2.1 mm long, 1.6 wide. First femur 1.5 mm; patella and tibia 1.8; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.7 mm; third 1.1; fourth 1.7.

Diagnosis. This female is similar to *A. conica* but differs by having the lobe of the epigynum projecting more posteriorly and the lips on each side less posteriorly (Fig. 512).

Alpaida costai new species Figures 515–518; Map 5

Holotype. Female holotype and four female paratypes from José C. Paz, Prov. Buenos Aires, Argentina (Rosas Costa, MLP). The species is named after the collector.

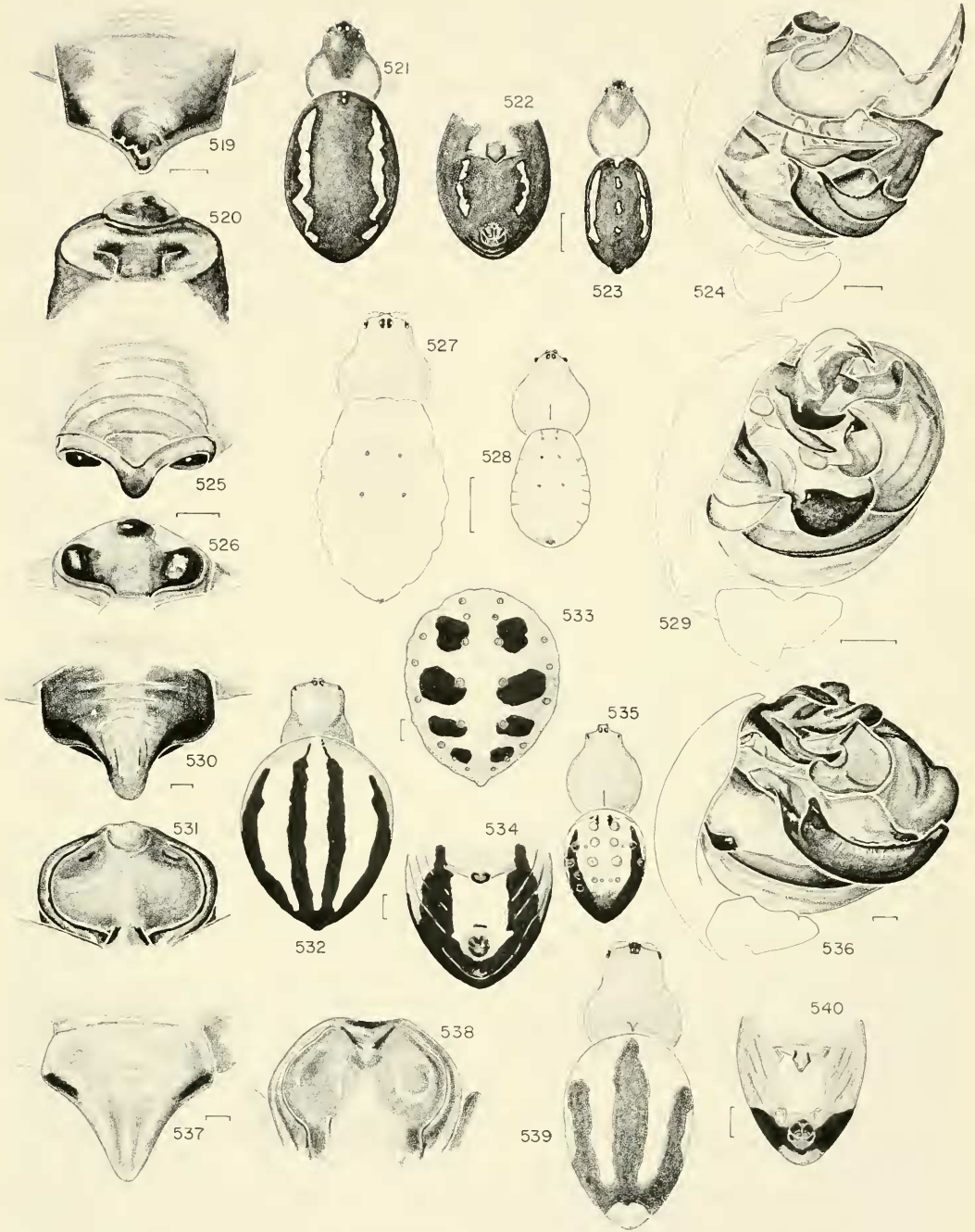
Description. Female. Carapace, sternum, legs orange. Dorsum of abdomen whitish; venter with two parallel longitudinal white lines enclosing a dusky area (Fig. 518). Eyes small. Anterior median eyes 1.7 times their diameter apart; posterior median eyes twice their diameter apart. Abdomen with anterior median hump and a tail (Fig. 517). Total length 7.8 mm. Carapace 2.5 mm long, 1.9 wide. First femur 1.7 mm; patella and tibia 2.3; metatarsus 1.3; tarsus 0.7. Second patella and tibia 2.0 mm; third 1.3; fourth 1.9.

Note. All type specimens are in poor physical condition, having once been dry.

Figures 519–522. *Alpaida muco* n. sp., female. 519, epigynum, ventral. 520, epigynum, posterior. 521, dorsal. 522, ventral.

Figures 523, 524. *A. utiariti* n. sp. male. 523, dorsal. 524, left palpus.

Figures 525–529. *A. albocincta* (Mello-Leitão). 525–527, female. 525, epigynum, ventral. 526, epigynum, posterior. 527, dorsal. 528, 529, male. 528, dorsal. 529, palpus.



Figures 530–537. *A. quadrilorata* (Simon). 530–534, female. 530, epigynum, ventral. 531, epigynum, posterior. 532, 533, dorsal. 534, ventral. 535, 536, male. 535, dorsal. 536, palpus.

Figures 537–540. *A. angra* n. sp., female. 537, epigynum, ventral. 538, epigynum, posterior. 539, dorsal. 540, ventral.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

The transverse posterior piece of the epigynum (Fig. 515) is torn off in all specimens but the holotype.

Diagnosis. This species differs from other *Alpaida* by the elongate abdomen with an anterior median hump (Fig. 517), by the epigynum, which is a ventrally projecting bulge with a sclerotized tip on each side (Fig. 515), and, in posterior view, by the heart-shaped convex median plate (Fig. 516). (It is not certain if the specimen has the lobe of the epigynum torn off or if it never had a median lobe.)

Alpaida muco new species

Figures 519–522; Map 5

Holotype. Female from 20 km N of Río Muco, 175 m, Dpto. Meta, Colombia, 1978 (W. E. Eberhard no. 1348, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace black, sides of thorax orange, rims black. Sternum, orange. Coxae, distal leg articles black. Dorsum of abdomen, black with a pair of white longitudinal lines (Fig. 521); venter black with a pair of white lines (Fig. 522). Fourth legs longer than first. Abdomen oval. Total length 4.2 mm. Carapace 1.7 mm long, 1.3 wide. First femur 1.5 mm; patella and tibia 1.8; metatarsus 1.1; tarsus 0.7. Second patella and tibia 1.5 mm; third 1.1; fourth 1.8.

Note. The male of this species may be *A. utiariti*.

Diagnosis. The dark color, oval abdomen (Fig. 521), pentagonal shape of the epigynum in ventral view (Fig. 519) and two curved grooves in the median plate in posterior view (Fig. 520) separate the female from other species.

Alpaida utiariti new species

Figures 523, 524; Map 5

Holotype. Male from Utiariti, Mato Grosso, Brazil, July 30, 1961 (K. Lenko, MZSP no. 3572). The specific name is a noun in apposition after the locality.

Description. Male. Head and edge of thorax black, thorax orange. Labium, endites black. Sternum orange with some

white pigment. Coxae, legs black, distal articles dusky orange, posterior two leg pairs ringed. Dorsum of abdomen black with three indistinct white lines (Fig. 523); venter black with two parallel white lines. Secondary eyes 0.7 diameter of anterior medians. Anterior median eyes slightly less than their diameter apart; posterior median eyes slightly more than their diameter apart. Fourth legs slightly longer than the first; second tibiae without macrosetae and not swollen. Abdomen elongate, oval, with posterior hump (Fig. 523). Total length 5.2 mm. Carapace 2.1 mm long, 1.5 wide. First femur 2.1 mm; patella and tibia 2.4; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.9 mm; third 1.7; fourth 2.5.

Note. This male may belong to *A. muco*, but the species' collecting sites are far apart.

Diagnosis. Unlike any other *Alpaida*, the median apophysis has a set off piece with three tips and the distal end of the terminal apophysis has a long saber-shaped projection (Fig. 524).

Alpaida albocincta (Mello-Leitão),
new combination

Figures 525–529; Map 5

Epeirella albocincta Mello-Leitão, 1945: 236. Immature female holotype from Puerto Victoria, Misiones, Argentina (MLP), examined.

Note. Brignoli (1983) cited the species from Guyana and provided erroneous date and citation.

Description. Female. Carapace, sternum, legs yellowish. Dorsum of abdomen yellowish, white around sides, with faint black spot on posterior tip. Sides white. Venter dirty yellowish with some white pigment spots along center line. Abdomen truncate anterior with lateral grooves (Fig. 527). Total length 5.0 mm. Carapace 2.0 mm long, 1.7 wide. First femur 1.8 mm; patella and tibia 2.0; metatarsus 1.3; tarsus 0.7. Second patella and tibia 1.7; third 1.3; fourth 1.8.

Male. Coloration as in female (Fig. 528). Second tibiae thicker than others and with macrosetae. Total length 3.5 mm. Carapace 1.7 mm long, 1.5 wide. First femur

1.8 mm; patella and tibia 1.9; metatarsus 1.3; tarsus 0.7. Second patella and tibia 1.5 mm; third 1.1; fourth 1.6.

Variation. Total length females varies from 4.2 to 5.0 mm, males from 2.9 to 3.8. The lateral ends of the posterior median plate may be sclerotized dark or light (Fig. 526).

The female and male described and illustrated are from Rio Grande do Sul (MCN).

Diagnosis. Females are distinguished by the lateral grooves on the abdomen (Fig. 527) and also by the convex lobes on each side of the posterior median plate (Fig. 526). The males are distinguished by the deep median apophysis and the three pronged terminal apophyses, the basal prong and two distal ones pointing at each other (Fig. 529).

Records. VENEZUELA *Aragua*: Rancho Grande, 23 Aug. 1946, ♂ (W. Beebe, AMNH). BRAZIL *Rio Grande do Sul*: Montenegro, 15 Dec. 1977, ♀ (E. H. Buck-up, MCN), 10 Nov. 1977, 6♂, ♀ (E. H. Buck-up, MCN 6639), 6 Oct. 1977, ♂ (A. A. Lise, MCN 6832); Muçum, 2 Mar. 1984, 2♂ (A. D. Brescovit, MCN 12118). ARGENTINA *Misiones*: Eldorado, 1964, ♀ (A. Kovacs, AMNH).

Alpaida quadrilorata (Simon),
new combination

Plate 1; Figures 530–536; Map 5

Araneus quadriloratus Simon, 1897c: 5. Female holotype from Asunción, Paraguay (MNHN), examined, Bonnet, 1955: 579.

Aranea quadrilorata:—Roewer, 1942: 850.

Cercidia octomaculata Mello-Leitão, 1945: 236, fig. 10, ♀. Female holotype from Pindapoy, Prov. Misiones, Argentina (MLP), examined, NEW SYNONYMY.

Parepeira ocellifera Mello-Leitão, 1945: 241, fig. 19, ♂. Male holotype from Mburucuya, Prov. Corrientes, Argentina (MLP), examined, NEW SYNONYMY.

Alpaida ocellifera:—Brignoli, 1983: 256.

Alpaida octomaculata:—Brignoli, 1983: 256.

Description. Female. Carapace orange. Sternum orange with a median black streak. Legs orange with wide black rings. Dorsum of abdomen with four black, lon-

gitudinal bands, white in between, orange on each side anteriorly (Fig. 532); venter with two black bands, white in middle (Fig. 534). Fourth legs longer than first. Abdomen oval, pointed behind. Total length 11.6 mm. Carapace 5.0 mm long, 3.6 wide. First femur 3.1 mm; patella and tibia 4.2; metatarsus 2.3; tarsus 1.1. Second patella and tibia 3.7 mm; third 2.6. Fourth femur 3.2 mm; patella and tibia 4.2; metatarsus 2.6; tarsus 1.0.

Male. Coloration as in female, but legs darker. Abdomen with orange disks and two median dorsal black stripes (Fig. 535). Second tibiae thick with strong macrosetae. Abdomen sclerotized, with dorsal sclerotized disks. Total length 9.1 mm. Carapace 4.5 mm long, 3.4 wide. First femur 3.4 mm; patella and tibia 4.1; metatarsus 2.5; tarsus 1.0. Second patella and tibia 3.6 mm; third 2.4; fourth 3.4.

Variation. Total length of females varies from 10.7 to 13.6 mm, of males from 8.9 to 9.5. Females are marked with black patches on the abdomen (Fig. 533) or longitudinal bands. Frequently both kinds of females are collected together. The background of stripes or patches varies from white to dark orange in alcoholic specimens. A male from Pelotas, Rio Grande do Sul, was all black.

The female and male illustrated and described are from Rio Grande do Sul (MCZ).

Diagnosis. The markings on the abdomen in both sexes (Figs. 532–535) separate the species from *A. angra* and other *Alpaida*. The epigynum is triangular with an indistinct lip (Fig. 530), the palpus has a long median apophysis, and both the embolus and basal prong of the embolus are curved, with their tips approaching each other (Fig. 536).

Natural History. Immature individuals have been collected from a tiny web in agave on a dry hillside at Port Alegre (Plate 1), adults are collected on the thistle-like umbellifer *Eryngium horridum* (A. A. Lise, personal correspondence). Collections from Paraguay came from the same species of plant. Kochalka (in letter) wrote that the web is always in the center of the plant,

the spider in the hub during the day. The plant grows in sunny places in wet soil. These plants usually have trapped water among the bases of leaves. When disturbed, the spiders submerge. "As far as I am aware, this is the only *Alpaida* that goes under water . . . the spider goes in head first and wedges itself so tightly into the base of the leaf, that one must destroy the plant to get the spider out. I have divided *A. quadrilobata* into three color varieties. I think they are separate species."

Records. BRAZIL *Minas Gerais*: Serra do Caraça (MZSP 6715). *São Paulo*: Campos do Jordão (MZSP 4407); Ipiranga (MZSP 5792). *Paraná*: Curitiba (MZSP 3017, 4976). *Rio Grande do Sul*: Montenegro (MCN); Pelotas (MCN); Gravataí (MCZ); Garruchos, São Borja (MCN); Triunfo (MCN); Porto Alegre (MCN, MNRJ). URUGUAY *Lavaleja*: Asperesas del Polanco (MHNM). *Artigas*: Arroyo Tres Cruces (MHNM). *Treinta y Tres*: Santa Clara de Olimar (MHNM). PARAGUAY *Paraguarí*: Cerro Acahay, Colonia Virgen de Fátima (MNHNP); Sapucaí (MNHNP, MCZ). *Central*: Luque (MNHNP). *Concepción*: Territ. Foncière (MCZ). ARGENTINA *Misiones*: San Pedro (MACN). *Corrientes*: Corrientes (MACN). *Buenos Aires*: Buenos Aires (MACN).

Alpaida angra new species

Figures 537–540; Map 5

Holotype. Female holotype and five female paratypes from Angra dos Reis, Est. Rio de Janeiro, Brazil, 28 Dec. 1951 (L. Travassos Filho and Rabello, MZSP no. 6818). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, sternum, coxae orange. Legs black. Dorsum of abdomen black, white and orange (Fig. 539); venter with central white patch on orange and a posterior transverse black band including the spinnerets (Fig. 540). Anterior median eyes their diameter apart; posterior median eyes 1.3 times their diameter apart. Abdomen oval. Total length 9.4 mm. Carapace 3.9 mm long, 3.2 wide. First femur 3.1 mm; patella and tibia 3.9;

metatarsus 2.5; tarsus 1.2. Second patella and tibia 3.4 mm; third 2.4; fourth 3.7.

Diagnosis. This species is distinguished from *A. quadrilobata* by a black band through the median of the abdomen (Fig. 539) and an epigynum with a longer lobe, making the epigynum as wide as long in ventral view (Fig. 537).

Paratype. BRAZIL *São Paulo*: Itanhaém, Nov. 1925 (R. Spitz, MZSP 5469).

Alpaida darlingtoni new species

Figures 541–546; Map 5

Holotype. Female holotype with male and juvenile male paratypes from Cerro Pulmado, 2,500–2,800 m, northwestern Sierra Nevada de Santa Marta, Colombia, 25 Sept. 1928 (P. J. Darlington, MCZ). The species is named after the collector.

Description. Female. Carapace, sternum, legs orange. Dorsum of abdomen white with a posterior pair of black spots (Fig. 543); venter orange. Abdomen oval, with lateral grooves (Fig. 543). Total length 4.9 mm. Carapace 2.1 mm long, 1.6 wide. First femur 1.9 mm; patella and tibia 2.3; metatarsus 1.7; tarsus 0.9. Second patella and tibia 2.0 mm; third 1.1; fourth 1.8.

Male. Coloration as in female (Fig. 545). Second tibiae with macrosetae, fourth trochanters with a macroseta. Total length 4.2 mm. Carapace 2.2 mm long, 1.9 wide. First femur 2.0 mm; patella and tibia 2.5. Second femur 1.8 mm; third 1.1; fourth 1.9.

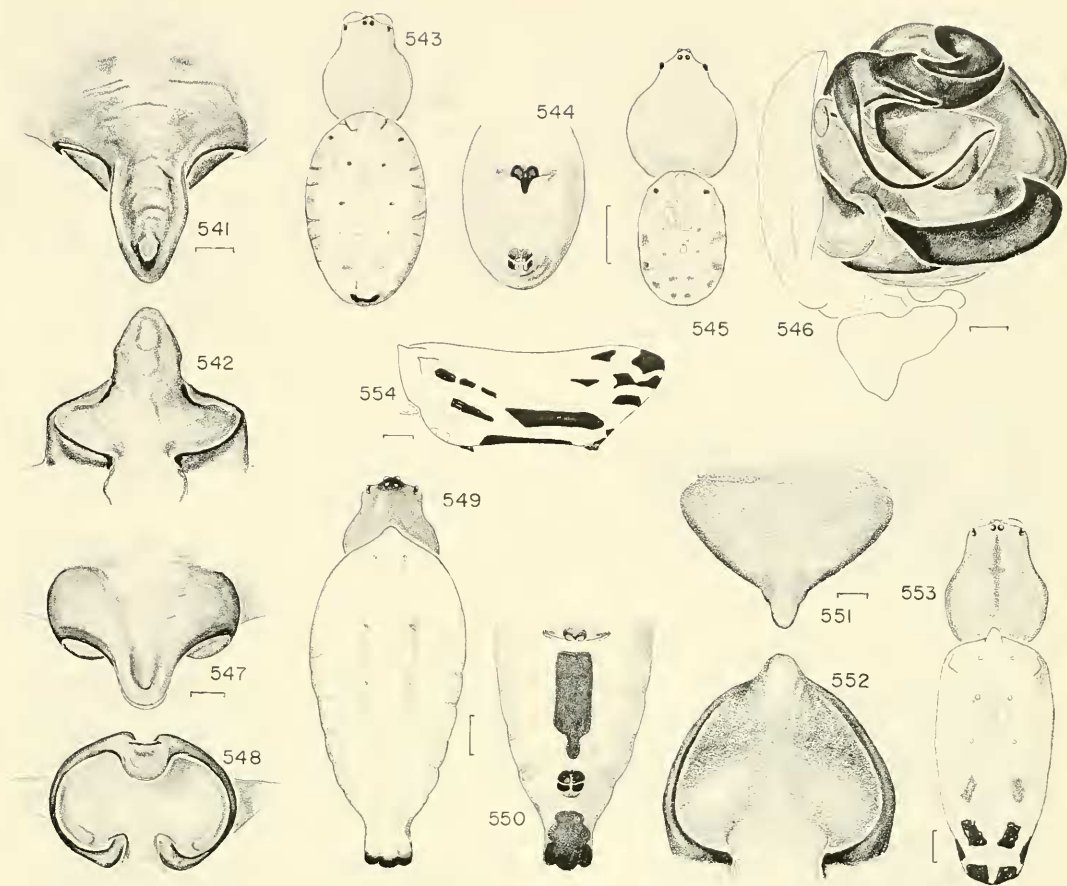
Diagnosis. The female distinguished from other *Alpaida* species by the longer than wide epigynum with a scape that is slightly constricted at its base (Fig. 541). The palpus, unlike others, has a filiform embolus with the distal lobe of the terminal apophysis forming a hook, its tip pointing at the cymbium (Fig. 546).

Alpaida madeira new species

Figures 547–550; Map 5

Holotype. Female from Rio Madeira, Pôrto Velho, Est. Rondônia, Brazil (Stanford Exped., W. M. Mann, ex MCZ, MZSP). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange, median eye region black. Sternum, coxae



Figures 541–546. *Alpaida darlingtoni* n. sp., female. 541, epigynum, ventral. 542, epigynum, posterior. 543, dorsal. 544, ventral. 545, 546, male. 545, dorsal. 546, left palpus.

Figures 547–550. *A. madeira* n. sp., female. 547, epigynum, ventral. 548, epigynum, posterior. 549, dorsal. 550, ventral.

Figures 551–554. *A. roemeri* (Strand), female. 551, epigynum, ventral. 552, epigynum, posterior. 553, dorsal. 554, lateral.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

orange. Second femora, distal half of other and distal articles black with orange ring proximally on tibia. Dorsum of abdomen white with tip of tail black (Fig. 549); venter with black rectangle, black spinnerets, black tail (Fig. 550). Abdomen elongated with tail basally constricted. Total length 10.0 mm. Carapace 2.9 mm long, 2.5 wide. First femur 3.7 mm; patella and tibia 4.3; metatarsus 3.1; tarsus 1.2. Second patella and tibia 3.4 mm; third 2.4; fourth 4.0.

Diagnosis. Females, unlike other *Alpaida*, have a tail, slightly constricted at

its base and with three distal lobes, on the abdomen (Figs. 549, 550). The epigynum is distinguished from that of *A. quadrilobata* by a slight median longitudinal groove (Figs. 547, 548).

***Alpaida roemeri* (Strand),
new combination**

Figures 551–554; Map 5

Aranea roemeri Strand, 1908: 3. Female holotype from Joinville [Joinville], Santa Catarina, Brazil (SMF), examined. Roewer, 1942: 851.
Araneus roemeri:—Bonnet, 1955: 586.

Note. The abdomen of the holotype is damaged.

Description. Female. Carapace brown with a median longitudinal dark line and thoracic border dark. Sternum, legs light brown; legs with contrasting dark brown rings. Dorsum of abdomen and sides with black patches on posterior (Fig. 553); sides with black patches, black between genital groove and spinnerets (Fig. 554); spinnerets dark brown; paired black patches on overhang behind spinnerets. Anterior median eyes 1.5 diameters apart, posterior median eyes 1.5 diameters apart. Abdomen [damaged] probably with three humps anteriorly, much longer than wide, with tail overhanging spinnerets (Fig. 554). Total length 12.0 mm. Carapace 4.1 mm long, 3.5 wide. First femur 4.2 mm; patella and tibia 4.5; metatarsus 3.4; tarsus 1.4. Third patella and tibia 2.6 mm; fourth 4.3.

Diagnosis. This species is distinguished from others by the slight constriction near the posterior end of the abdomen (Fig. 553). The epigynum differs from that of *A. madeira* by having only a small median lobe and being subtriangular in median and posterior views (Figs. 551, 552).

Alpaida eberhardi new species
Figures 555–558; Map 5

Holotype. Female from 25 km W of Queremal, Dpto. Valle, Colombia, 1977, (W. Eberhard, MCZ). The species is named after the collector.

Description. Female. Carapace, yellowish. Labium, endites, sternum, black. Legs yellowish with wide dusky rings. Dorsum of abdomen with white patches (Fig. 557); sides with dorsal longitudinal black band and ventral white area; venter black (Fig. 558). Abdomen elongate rounded in front, pointed behind (Fig. 557). Total length 4.7 mm. Carapace 1.9 mm long, 1.5 wide. First femur 1.9 mm; patella and tibia 2.5; metatarsus 1.5; tarsus 0.7. Second patella and tibia 2.2 mm; third 1.2; fourth 2.1.

Variation. Total length from 3.8 to 4.8 mm. The holotype was described and illustrated.

Diagnosis. The epigynum differs from

that of most *Alpaida* by having an edge along its anterior face in ventral view and from that of *A. machala* by having a longer, narrower median lobe (Figs. 555, 556).

Paratypes. COLOMBIA *Antioquia*: Mutatá “Cancheras” 6 Dec. 1963, ♀ (P. B. Schneble, MCZ). *Valle*: Central Hidroeléctrica Anchicayá, Canyon Río Anchicayá, 400 m, 1975, ♀, 1977, ♀ (W. Eberhard, MCZ).

Alpaida machala new species
Figures 559–563; Map 5

Holotype. Female from Buenavista, 20 km SE of Machala, Prov. El Oro, Ecuador, 1–20 Nov. 1942 (R. Walls, CAS). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellow; labium, endites dusky; sternum black. Coxae and legs yellow. Dorsum of abdomen with white pigment, with dusky marks on shoulder, dusky transverse band posteriorly (Fig. 562); sides with a dusky band between two white bands; venter black from genital groove to behind spinnerets (Fig. 563). Abdomen rounded anteriorly, slightly pointed posteriorly [abdomen damaged]. Total length 3.8 mm. Carapace 1.5 mm long, 1.3 wide. First femur 1.9 mm; patella and tibia 2.1; metatarsus 1.4; tarsus 0.7. Second patella and tibia 1.9 mm; third 1.1; fourth 1.8.

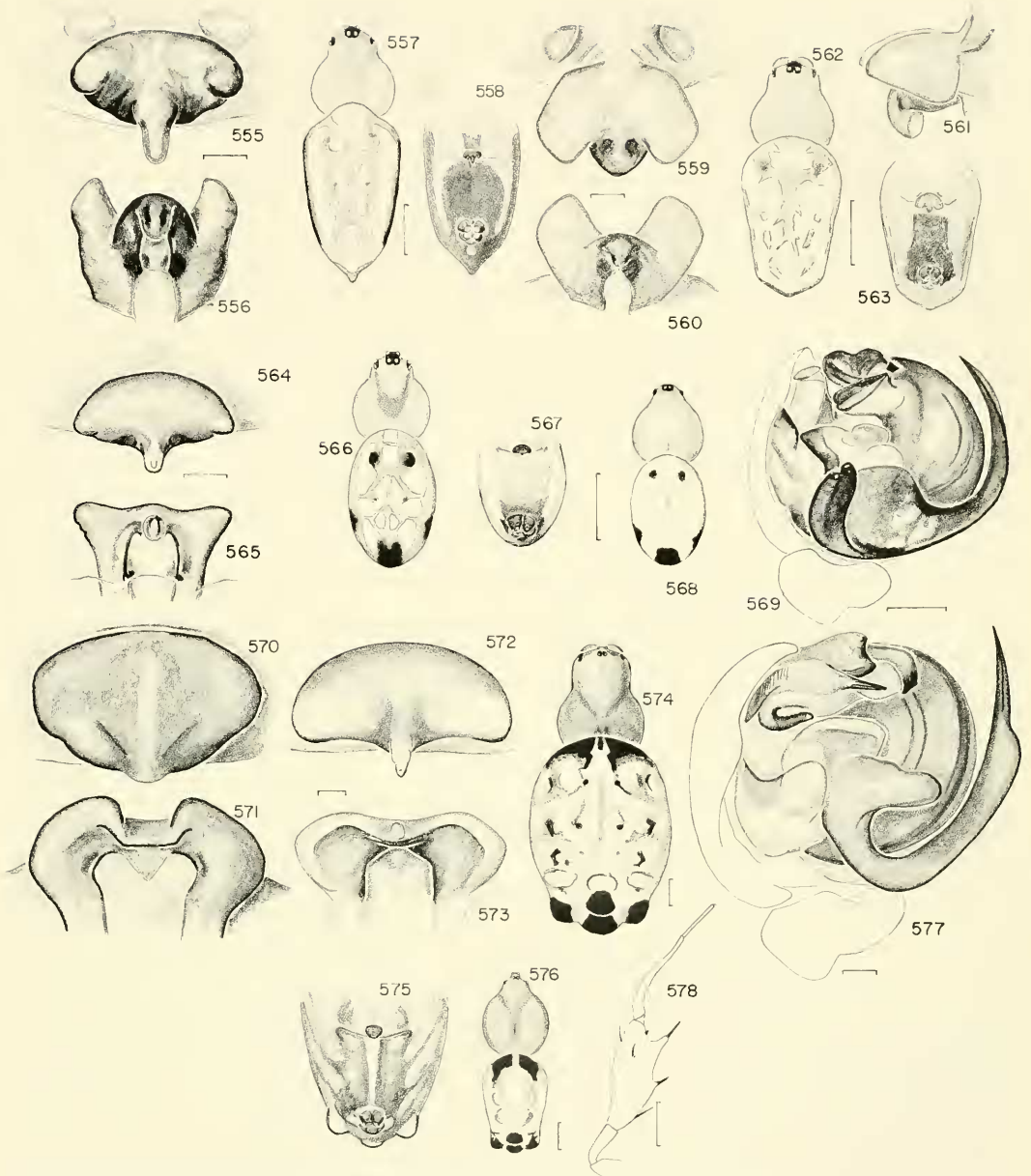
Diagnosis. The epigynum of the female differs from that of *A. eberhardi* by having the median lobe wider at its base and the lateral lobes longer (Figs. 559–561). Also, the anterior margin of the epigynum is broken in the midline (Fig. 559).

Paratype. ECUADOR *Pichincha*: 35 km NW Santo Domingo de los Colorados, 22 Dec. 1958, 2♀ (A. M. Nadler, AMNH).

Alpaida queremal new species
Figures 564–569; Map 5

Holotype. Female from Río San Juan, afl. del Digua near Queremal, 1,300 m, Dpto. Valle, Colombia, 1976 (W. Eberhard, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellow-white with thorax dusky; labium, endites,



Figures 555–558. *Alpaيدا eberhardi* n. sp., female. 555, epigynum, ventral. 556, epigynum, posterior. 557, dorsal. 558, ventral.

Figures 559–563. *A. machala* n. sp., female. 559, epigynum, ventral. 560, epigynum, posterior. 561, epigynum, lateral. 562, dorsal. 563, ventral.

Figures 564–569. *A. queremal* n. sp. 564–567, female. 564, epigynum, ventral. 565, epigynum, posterior. 566, dorsal. 567, ventral. 568, 569, male. 568, dorsal. 569, left palpus.

Figures 570–578. *A. truncata* (Keyserling). 570–575, female. 570, 572, epigynum, ventral. 571, 573, epigynum, posterior. 570, 571, (Paraguay). 572, 573, (Panama). 574, dorsal. 575, ventral. 576–578, male. 576, dorsal. 577, palpus. 578, second left leg, dorsal.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

dusky. Sternum, black. Legs, yellow-white. Dorsum of abdomen with paired white patches, a pair of black patches anteriorly, and a posterior median black patch (Fig. 566); sides with a dorsal posterior black mark and ventral white band; venter, dusky, black around spinnerets (Fig. 567). Abdomen oval. Total length 3.2 mm. Carapace 1.4 mm long, 1.1 wide. First femur 1.6 mm; patella and tibia 1.8; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.5 mm; third 1.0; fourth 1.4.

Male. Color as in female (Fig. 568). Total length 2.7 mm. Carapace 1.3 mm long, 1.1 wide. First femur 1.6 mm; patella and tibia 1.7; metatarsus 1.0, tarsus 0.5. Second patella and tibia 1.3 mm; third 0.9; fourth 1.2.

Variation. Total length of females varies from 3.2 to 3.5 mm. Female from Dpto. Nariño has carapace olive-white without dusky areas, the dorsum of the abdomen with sides and posterior golden yellow on white, an anterior golden yellow patch, middle without pigment, black on each shoulder, and a pair of black patches posterior. Endites, labium, sternum and venter of abdomen black.

The female holotype is described and illustrated.

Diagnosis. This species is much smaller than *A. truncata* and the abdomen is rounded behind and lacks the four humps on the posterior (Figs. 566, 567). Unlike *A. truncata*, the epigynum has two projecting ventral lateral lobes (Figs. 564, 565) and the median apophysis of the male palpus lacks the notch in the base present in *A. truncata* (Fig. 569).

Paratypes. COLOMBIA *Nariño*: La Planada, 1,800 m, 7 km S Choconés, nr. Ricaurte, July 1986, 3♀, 6♂ (W. Eberhard FN8-29F, MCZ).

Alpaida truncata (Keyserling),
new combination

Plates 1, 2; Figures 570–578; Map 5

Epeira truncata Keyserling, 1865: 807, pl. 19, fig. 21, ♀. Female from Uruguay (BMNH), examined.
Epeira elegantissima Taczanowski, 1878: 170, pl. 2,

fig. 19. ♀. Female from Amable María, [Dpto. Junín], Peru (PAN), examined.

Epeira cylindrica Taczanowski, 1878: 171, pl. 2, fig. 20, 21, ♀, ♂. Male lectotype here designated from Amable María, [Dpto. Junín], Peru (PAN), examined.

Epeira nigropustulata O. P.-Cambridge, 1893: 111, pl. 15, fig. 5, ♀. Female from Teapa, Tabasco, Mexico (BMNH), examined. NEW SYNONYMY.

Aranea nigropustulata:—F. P.-Cambridge, 1904: 516, pl. 49, fig. 22, ♀.

Araneus mutatus Chamberlin and Ivie, 1936: 46, pl. 14, fig. 128, 129, ♀. Female from Barro Colorado Island, Panama (AMNH), examined. Bonnet, 1955: 547. NEW SYNONYMY.

Edricus truncatus:—Roewer, 1942: 762. Bonnet, 1956: 1649.

Epeiroides albonotatus Mello-Leitão, 1945: 237. Early instar, immature from Misiones Prov., Argentina (MULP), examined. Brignoli, 1983: 268. NEW SYNONYMY.

Edricus ensifer Caporiacco, 1947: 25; 1948: 658, fig. 66, ♂. Male holotype from Two Mouths, Essequibo River, British Guyana (MZUF), examined. NEW SYNONYMY.

Subedricus nigropustulata:—Caporiacco, 1954: 84.

Description. Female. Carapace, sternum, legs brown. Dorsum of abdomen white and black (Fig. 574); venter with median white streak (Fig. 575). Abdomen oval, posterior truncate with four humps (Fig. 574). Total length 10.7 mm. Carapace 4.2 mm long, 3.4 wide. First femur 3.9 mm; patella and tibia 4.9; metatarsus 3.1; tarsus 1.5. Second patella and tibia 4.5 mm; third 2.7; and fourth 4.7.

Male. Coloration as in female but carapace, sternum and legs lighter brown (Fig. 576). Tibia of second leg flattened and wide (Fig. 578). Shape of abdomen like that of female. Total length 6.2 mm. Carapace 3.1 mm long, 2.4 wide. First femur 3.4 mm; patella and tibia 4.2; metatarsus 2.5; tarsus 1.2. Second patella and tibia 3.5 mm; third 2.0; and fourth 3.6.

Variation. Total length of females varies from 8.3 to 12.8 mm, of males from 4.8 to 8.2. Some individuals are all black. A living specimen had carapace and legs a transparent orange, abdomen bright yellow with shiny black patches (Plate 1).

The female and male illustrated and described are from Paraguay (MCZ).

Diagnosis. Both sexes differ from all

other *Alpaida* by having the abdomen truncate posteriorly with black humps (Figs. 574–576), and also differ from *A. queremal* by being larger. The female, unlike *A. queremal* lacks the lateral lobes of the epigynum (Figs. 570, 571). The male, unlike other *Alpaida*, has a modified second tibia, flattened and wide, bearing two macrosetae (Fig. 578) and is distinguished from *A. queremal* by a notch in the base of the median apophysis of the palpus (Fig. 577).

Natural History and Distribution. The species has been collected from forest in Pará and Minas Gerais, Brazil, and from gallery forest in Mato Grosso.

Alpaida truncata do not usually have a free sector in the web (Plate 2) but have a signal line out of the web plane and an intact orb. The posterior ends of their abdomens are brightly colored. The spiders sit in the retreat facing away from the orb and hold the signal line with a leg four. Kochalka (in letter) wrote that in Paraguay, *A. truncata* is found in a rolled green leaf during the day. The black spots on the abdomen look like eyes when seen through the opening of the retreat, which is usually 1 to 2 m above the ground in humid forest and quite small. All coxae, third and fourth femora, and ventrolateral stripes on the abdomen are green. The green fills in the space between eyespots and spinnerets. *A. truncata* is found from southern Mexico to northern Argentina (Map 5).

Records. COSTA RICA *Heredia*: La Selva, nr. Puerto Viejo (MCZ). *Cartago*: Turrialba (MCZ). PANAMA *Panamá*: Arraijan (MCZ); Forest Reserve (MCZ); Barro Colorado Isl., Lago Gatún (AMNH). LESSER ANTILLES *Trinidad*: Coparo (AMNH). VENEZUELA *Carabobo*: San Esteban (AMNH). *Bolívar*: Hato La Vergareña (AMNH). *Amazonas*: Prov. la Esmeralda, Alto Orinoco (MCZ). SURINAM *Saramacca*: Voltzberg—Raleighvallen Nature Reserve (MCZ). *Marowijne*: Christian Kondre (AMNH). COLOMBIA *Santander*: Río Suárez, 800–1,000 m (AMNH). *Cundinamarca*: Monterredondo, 1,200 m

(MCZ). *Meta*: Puerto Lleras (MCZ); 15 km SW Puerto López, 500 m, (MCZ). *Putumayo*: Pto. Asis (MCZ). ECUADOR *Napo*: Cuyabene (L. Grande) (MECN); *Monrona-Santiago*: Los Trayos (MCZ); Sucúa (MCZ). *Los Ríos*: Juan Montalvo (AMNH); SW Quevedo (CAS). PERU *Loreto*: Iquitos (MCZ). *San Martín*: 32 km SE Moyobamba (AMNH). *Huánuco*: Tingo María (AMNH). *Cuzco*: Quillabamba, 1,000 m (AMNH). BRAZIL *Pará*: Belém (MEG, MCZ); Canindé, Rio Gurupi (AMNH). *Amazonas*: Benjamin Constant (MNRJ); Igarape Belém (AMNH); Fonte Boa (AMNH); Manaus (NHRM); mouth of Rio Embira, Rio Juruá (AMNH). *Bahia*: Salvador (AMNH); Uruçua (MCN). *Mato Grosso*: 260 km N Xavantina (MCZ); Chapada dos Guimarães (AMNH). *Minas Gerais*: Lavras (MCZ); Aripuana (MCZ). *Espírito Santo*: Sosretame Linhares (MZSP). *Rio de Janeiro*: Rio de Janeiro (AMNH). *São Paulo*: Faz Itaqueri (MCN). *Paraná*: Rio Negro (MNRJ). *Rio Grande do Sul*: Triunfo (MCN). BOLIVIA *El Beni*: Chacobo Indian Village, Río Benito (AMNH). PARAGUAY *Concepción*: Apa (AMNH). *Central*: San Lorenzo (MNHNP). *Paraguari*: Parque Nac. Ybyouí (MNHNP). *Caaguazú*: Colón (MNHNP). ARGENTINA *Misiones*: San Ignacio (MEG); Misiones (MACN); Puerto Victoria (MLP); Dpto. San Antonio (MEG); *Chaco*: Selva del Río de Oro (MEG).

Alpaida yotoco new species
Figures 579–582; Map 5

Holotype. Female from Yotoco, 1,500 m, Dpto. Valle, Colombia, Aug. 1977 (W. E. Eberhard no. 1217, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, yellowish. Labium, endites, sternum, black. Legs yellowish, distal articles dusky. Dorsum of abdomen with white patches (Figs. 581), lateral white patches yellowish; sides dusky; venter, black sides with tiny white spots (Fig. 582). Abdomen elongate oval with anterior median hump and posterior point (Fig. 581). Total length 4.3 mm. Carapace

1.5 mm long, 1.3 wide. First femur 1.7 mm; patella and tibia 1.9; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.6 mm; third 1.1; fourth 1.6.

Variation. Total length of females varies from 3.5 to 4.3 mm.

Diagnosis. This species is distinguished from *A. nadleri* by the epigynum which, in posterior view, has a lip as wide or wider than the median plate (Fig. 580).

Paratype. COLOMBIA *Valle*: nr. Yotoco, 1,600 m, Dec. 1976, ♀ (W. Eberhard, MCZ).

Alpaida nadleri new species
Figures 583–586; Map 5

Holotype. Female from Rancho Grande, Prov. Aragua, Venezuela, 20 Dec. 1954 (A. M. Nadler, AMNH). The species is named after the collector.

Description. Female. Carapace, sternum, legs yellowish. Dorsum of abdomen with white patches and two pairs of black patches (Fig. 585); venter with black patch between epigynum and spinnerets. Eyes small. Anterior median eyes 1.8 diameters apart; posterior median eyes 1.4 diameters. Abdomen rounded anteriorly and posteriorly. Total length 3.4 mm. Carapace 1.5 mm long, 1.3 wide. First femur 1.8 mm; patella and tibia 2.1; metatarsus 1.3; tarsus 0.6. Second patella and tibia 1.7 mm; third 1.1; fourth 1.6.

Diagnosis. The species is distinguished from *A. yotoco* by the curved lips near the midline in posterior view of the epigynum (Fig. 584).

Paratype. VENEZUELA *Aragua*: Rancho Grande, March 1946, ♀ (W. Beebe, AMNH).

Alpaida anchicaya new species
Figures 587–592; Map 5

Holotype. Male holotype and female paratype from Central Hidroeléctrica Anchicayá, Canyon Río An-

chicayá, 400 m, near road to Buenaventura, Dpto. Valle, Colombia, 24 April 197? (W. Eberhard, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellowish, eye region black. Chelicerae yellowish, distally black; labium, endites, sternum black. Legs yellowish, darker distally. Dorsum of abdomen with black and white pigment (Fig. 589); venter with wide median longitudinal black band (Fig. 590). Abdomen oval. Total length 2.5 mm. Carapace 1.23 mm long, 0.91 wide. First femur 1.36 mm; patella and tibia 1.53; metatarsus 1.00; tarsus 0.57. Second patella and tibia 1.24; third 0.78; fourth 1.20.

Male. Coloration as in female (Fig. 591). Second tibiae not swollen. Total length 2.1 mm. Carapace 1.14 mm long, 0.97 wide. First femur 1.63 mm; patella and tibia 1.78; metatarsus 1.11; tarsus 0.62. Second patella and tibia 1.37 mm; third 0.89; fourth 1.30.

Diagnosis. Females are distinguished from *A. cisneros* by two proximal notches on the epigynum, visible in posterior view (Fig. 588). The male, unlike most *Alpaida*, has the median apophysis of the palpus drawn out beyond the bulb as in *A. quezremal* and *A. truncata*, but differs from these two species by having a filiform embolus lying "on top" of the bulb (Fig. 592).

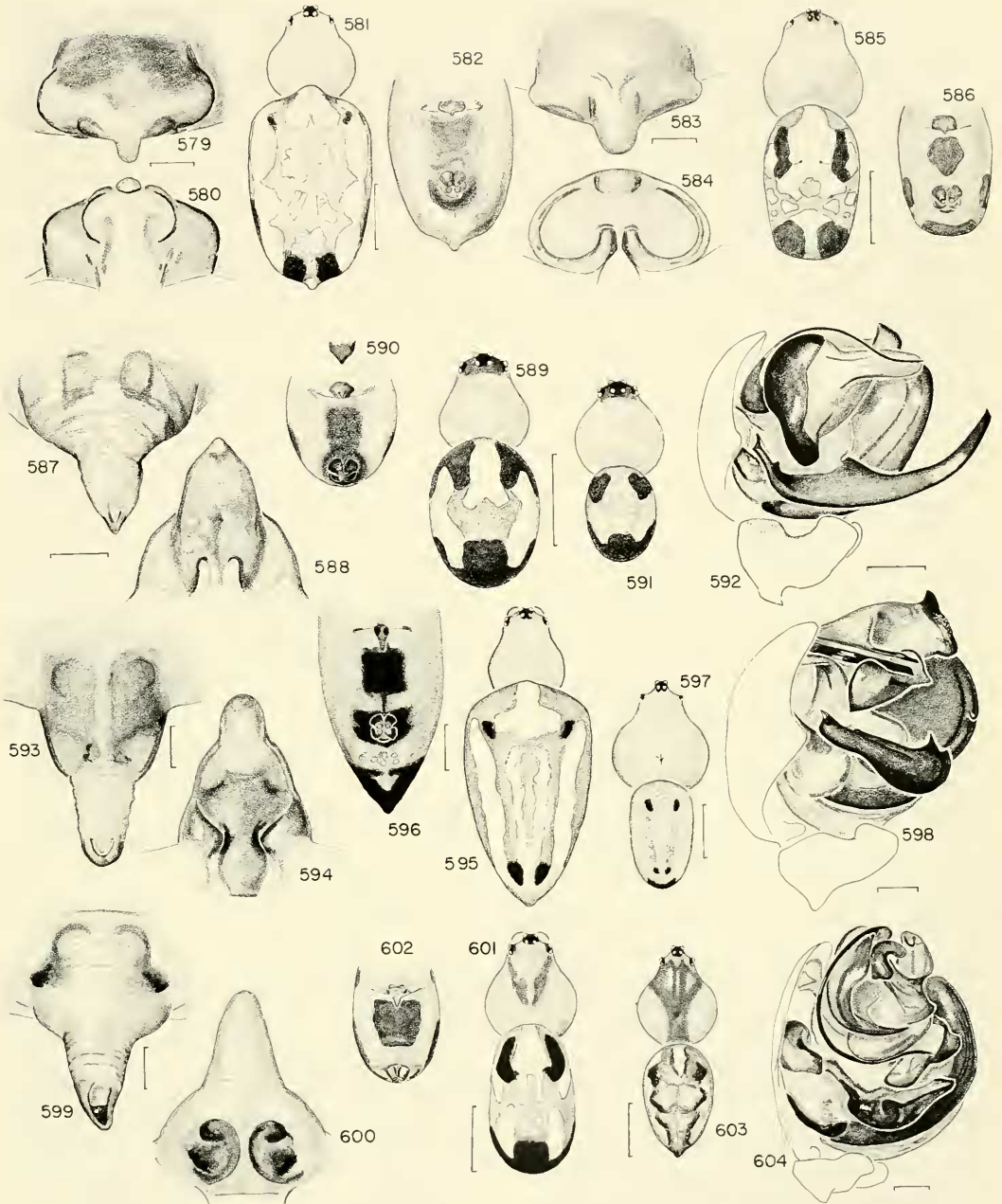
Paratypes. COLOMBIA *Valle*: Central Hidroeléctrica Anchicayá, 400 m, 4♀; 1977, ♀, 2♂; 1978, ♂ (all W. Eberhard, MCZ).

Alpaida tuonabo (Chamberlin and Ivie)
Figures 593–598; Map 5

Araneus tuonabo Chamberlin and Ivie, 1936: 50, pl. 14, fig. 130, ♀. Female holotype from Barro Colorado Island, Panama (AMNH), examined. Bonnet, 1955: 620. Lubin, 1978.

Aranea tuonabo:—Roewer, 1942: 854.

Alpaida tuonabo:—Shelly, 1983: 123. Eberhard, 1986: 73, fig. 4.2f (web).



Figures 593–598. *A. tuonabo* (Chamberlin and Ivie). 593–596, female. 593, epigynum, ventral. 594, epigynum, posterior. 595, dorsal. 596, ventral. 597, 598, male. 597, dorsal. 598, palpus.

Figures 599–602. *A. cisneros* n. sp., female. 599, epigynum, ventral. 600, epigynum, posterior. 601, dorsal. 602, ventral.

Figures 603, 604. *A. schneblei* n. sp., male. 603, dorsal. 604, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

Description. Female. Carapace colorless, whitish; sternum yellow. Legs colorless, ringed black; first and second patella and tibia black. Dorsum of abdomen with yellow-white bands separated by pigmentless area and four black patches (Fig. 595); venter with black patch, black around spinnerets and under tail (Fig. 596). Abdomen elongate (Fig. 595). Total length 6.7 mm. Carapace 2.1 mm long, 1.8 wide. First femur 2.5 mm; patella and tibia 2.8; metatarsus 1.7; tarsus 0.7. Second patella and tibia 2.5 mm; third 1.5; fourth 2.3.

Male. Carapace colorless to whitish. Legs blackish. Dorsum of abdomen yellowish-white with four black spots and black on posterior margin (Fig. 597); venter black in center, black around and behind spinnerets. Fourth coxae with one or two short macrosetae. Abdomen shorter than that of female. Total length 4.0 mm. Carapace 2.0 mm long, 1.8 wide. First femur 2.5 mm; patella and tibia 2.6; metatarsus 1.6; tarsus 0.7. Second patella and tibia 2.1 mm; third 1.3; fourth 2.1.

Variation. Females vary in total length from 4.1 to 6.7 mm, males from 3.5 to 4.0. A photograph of a living specimen had yellow patches on a dark dusky orange background with black marks.

Diagnosis. Females are distinguished from most *Alpaida* by the longer than wide epigynum with a wide scape (Fig. 593), and from *A. cisneros* in posterior view by a narrow lip with a proximal swelling (Fig. 594). Males distinguished from other species by the long median apophysis with one tooth on the proximal end and two teeth on the distal end (Fig. 598).

Natural History and Distribution. The species is very common in the Panama Canal area in open areas in lowland tropical moist forest from July to December, during the mid to late wet season. Females make and tend webs during the day and consume them at night. Web sites are shaded. Webs average 21.6 cm in diameter and are supported by herbaceous stems, woody vines and branches at a height of

0.6 to 1.2 m. Individuals move to another web site after one to two days. The spiders feed on various small insects (Lubin, 1978; Shelly, 1983). Eberhard (1986) illustrated the web.

Records. PANAMA *Colón*: Portobelo (MCZ); Fort Gulick (AMNH); Fort Sherman (AMNH). *Panamá*: Pipeline Road (MCZ, MIUP); Barro Colorado Island, Lago Gatún (MCZ, AMNH); Experimental Gardens (MCZ); Gamboa (AMNH); El Valle (MCZ).

Alpaida cisneros new species
Figures 599–602; Map 5

Holotype. Female from near Cisneros, 500 m, Dpto. Valle, Colombia, April 1976 (W. Eberhard no. 1089, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellow-white with a pair of dark marks. Labium, endites, sternum, black. Legs yellow-white. Dorsum of abdomen with black and white patches (Fig. 601); venter with median black patch (Fig. 602). Legs with a short dorsal macrosetae on each femur, several on inside of first. Total length 3.6 mm. Carapace 1.7 mm long, 1.5 wide. First femur 2.0 mm; patella and tibia 2.3; metatarsus 1.6; tarsus 0.8. Second patella and tibia 1.9 mm; third 1.3; fourth 1.9.

Variation. Females vary in total length from 3.4 to 4.7 mm. The largest specimen comes from Ecuador.

The female holotype was described and illustrated.

Diagnosis. This species is distinguished from *A. tuonabo* by the point on the scape of the epigynum (Fig. 599) and in posterior view by the dark seminal receptacles visible through the transparent integument (Fig. 600).

Paratypes. COLOMBIA *Valle*: 20 km E of Buenaventura, 1974, ♀ (W. Eberhard, MCZ). *Cauca*: NW of Guapi, ca. 100 m, 3 Jan. 1973, ♀ (W. Eberhard, MCZ). ECUADOR *Pichincha*: Via Pto. Quito, km 113, 5 April 1985, ♀ (G. Morejon, MECN).

Alpaida schneblei new species
Figures 603, 604; Map 5

Holotype. Male from Mutatá "Cancheras," Dpto. Antioquia, Colombia, July, 1963 (P. B. Schneble, MCZ). The species is named after the collector.

Description. Male. Carapace yellowish with black patch in middle (Fig. 603). Labium, sternum, endites, black. Coxae, distal leg articles yellow-white with indistinct narrow dark rings. Dorsum of abdomen with white cardiac mark and white band on each side (Fig. 603); venter, black. Abdomen pointed posteriorly. Total length 4.0 mm. Carapace 1.9 mm long, 1.6 wide. First femur 1.7 mm; patella and tibia 2.0; metatarsus 1.2; tarsus 0.6. Second patella and tibia 1.6 mm; third 1.2; fourth 1.9.

Diagnosis. Although the male belongs to the group of *Alpaida* species with a white cardiac mark, the palpus, with its long filamentous embolus, resembles the palpus of *A. anchicaya* and *A. cali* and others, but is distinguished by the shape of the median apophysis and terminal apophysis (Fig. 604).

Alpaida silencio new species
Figures 605–610; Map 5

Holotype. Male holotype and female paratype from El Silencio, near Cali, 2,000 m, Colombia, July 1974 (W. Eberhard no. 1-867, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace, legs light orange. Labium, endites, sternum black. Dorsum of abdomen with black and white pigment patches (Fig. 607); venter black around spinnerets, gray anteriorly with some white pigment (Fig. 608). Abdomen cylindrical (Fig. 607). Total length 3.8 mm. Carapace 1.6 mm long, 1.3 wide. First femur 1.8 mm; patella and tibia 2.0; metatarsus 1.3; tarsus 0.7. Second patella and tibia 1.8 mm; third 1.1; fourth 1.7.

Male. Coloration as in female (Fig. 609). Venter of abdomen mostly black. Second tibiae not swollen. Total length 3.2 mm. Carapace 1.6 mm long, 1.3 wide. First femur 1.9 mm; patella and tibia 2.0; meta-

tarsus 1.3; tarsus 0.6. Second patella and tibia 1.6 mm; third 1.1; fourth 1.5.

Diagnosis. Females distinguished from *A. anchicaya* by a lateral swelling on each side of the median lobe (Fig. 605). The palpus of the male differs from *A. anchicaya* by having the drawn out distal end of the median apophysis curled back, its tip under the conductor (Fig. 610) and the embolus wide at its base with a filamentous tip "on top" of the bulb (Fig. 610).

Natural History. This species is found in cloud forest at high elevation.

Paratypes. COLOMBIA Valle: Saladito, 1,800 m, Oct. 1975, ♀ (W. Eberhard E149, MCZ); 3 Jan. 1977, ♀ (H. Levi, MCZ).

Alpaida cali new species
Figures 611–616; Map 5

Holotype. Female from Cali, Dpto. Valle, Colombia, 1,000 m, 1976 (W. Eberhard, MCZ). The specific name is a noun in apposition after the locality.

Description. Female. Carapace orange-yellow; sternum orange with median black spot. Legs orange-yellow, third and fourth legs with narrow black rings or spots. Dorsum of abdomen with black and white pigment on orange gray; sides with diagonal streak anteriorly continued ventrally, a black patch posteriorly (Fig. 613); venter with black patches on orange (Fig. 614). Posterior median eyes twice diameter of all others. Abdomen oval, scalloped on sides (Figs. 613, 614). Total length 4.0 mm. Carapace 1.5 mm long, 1.1 wide. First femur 1.3 mm; patella and tibia 1.5; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.3 mm; third 0.8; fourth 1.3.

Male. Color as in female. Dorsum of abdomen with three pairs of black patches and posterior black mark (Fig. 615); venter dusky. Abdomen oval. Total length 2.8 mm. Carapace 1.4 mm long, 1.1 wide. First femur 1.5 mm; patella and tibia 1.5; metatarsus 1.0; tarsus 0.5. Second patella and tibia 1.2 mm; third 1.0; fourth 1.5.

Variation. Males vary in total length from 2.8 to 3.3 mm.

Diagnosis. The epigynum is as long as wide or slightly longer, with a wide semi-circular notch (Fig. 611), and, in posterior view, it is much wider than long (Fig. 612). The palpus has the embolus loop on "top" of the bulb toward the cymbium (Fig. 616), unlike that of any other *Alpaida*.

Paratypes. COLOMBIA *Valle*: Cali, 1,000 m, 1976, ♂; Río Jamundí near Jamundí, 1,000 m, 9 Dec. 1969, ♂, 17 June 1970, ♂ (all W. Eberhard, MCZ).

Alpaida nonoai new species

Figures 617–622; Map 5

Holotype. Female from Parque Estadual de Nonoai, Nonoai, Rio Grande do Sul, Brazil, 13 Jan. 1985 (A. A. Lise, MCN no. 12912). The specific name is a noun in apposition after the locality.

Description. Female. Carapace yellowish white with dusky median patch. Sternum, legs yellowish white. Dorsum of abdomen with three white bands, laterals with scalloped dorsal border, median ones indistinct in outline, and two posterior black patches (Figs. 619, 620); venter yellowish white, with black spinnerets. Anterior lateral eyes the diameter, posterior median eyes 1.6 diameters, posterior lateral eyes 1.3 diameters of anterior median eyes. Anterior median eyes slightly more than one diameter apart, posterior medians about their diameter apart. Abdomen oval. Total length 5.1 mm. Carapace 1.8 mm long, 1.3 wide. First femur 1.7 mm; patella and tibia 1.9; metatarsus 1.1; tarsus 0.7. Second patella and tibia 1.5 mm; third 1.0; fourth 1.6.

Male. Coloration as in female but with more black pigment on dorsum of abdomen (Fig. 621). Total length 3.9 mm. Carapace 1.8 mm long, 1.5 wide. First femur 1.8 mm; patella and tibia 2.1; metatarsus 1.1; tarsus 0.5. Second patella and tibia 1.8 mm; third 1.1; fourth 1.7.

Variation. Total length of females from 3.8 to 5.5 mm, males from 3.5 to 4.0. The abdomen of some specimens is oval (Fig. 619), of others, elongate (Fig. 620).

The female holotype and a male from Rio Grande do Sul (MCN) are described and illustrated.

Diagnosis. Females distinguished from similar species by the epigynum: in ventral view, the median plate shows as a bulge on each side of the lip (Fig. 617, as in *A. leucogramma*), and in posterior view, the median plate is convex (Fig. 618), distinct from *A. leucogramma*. The male distinguished from most *Alpaida* by the long filamentous embolus, which lies across the middle of the bulb, by a flat keel on the distal end of the median apophysis and by lobed terminal apophysis (Fig. 622).

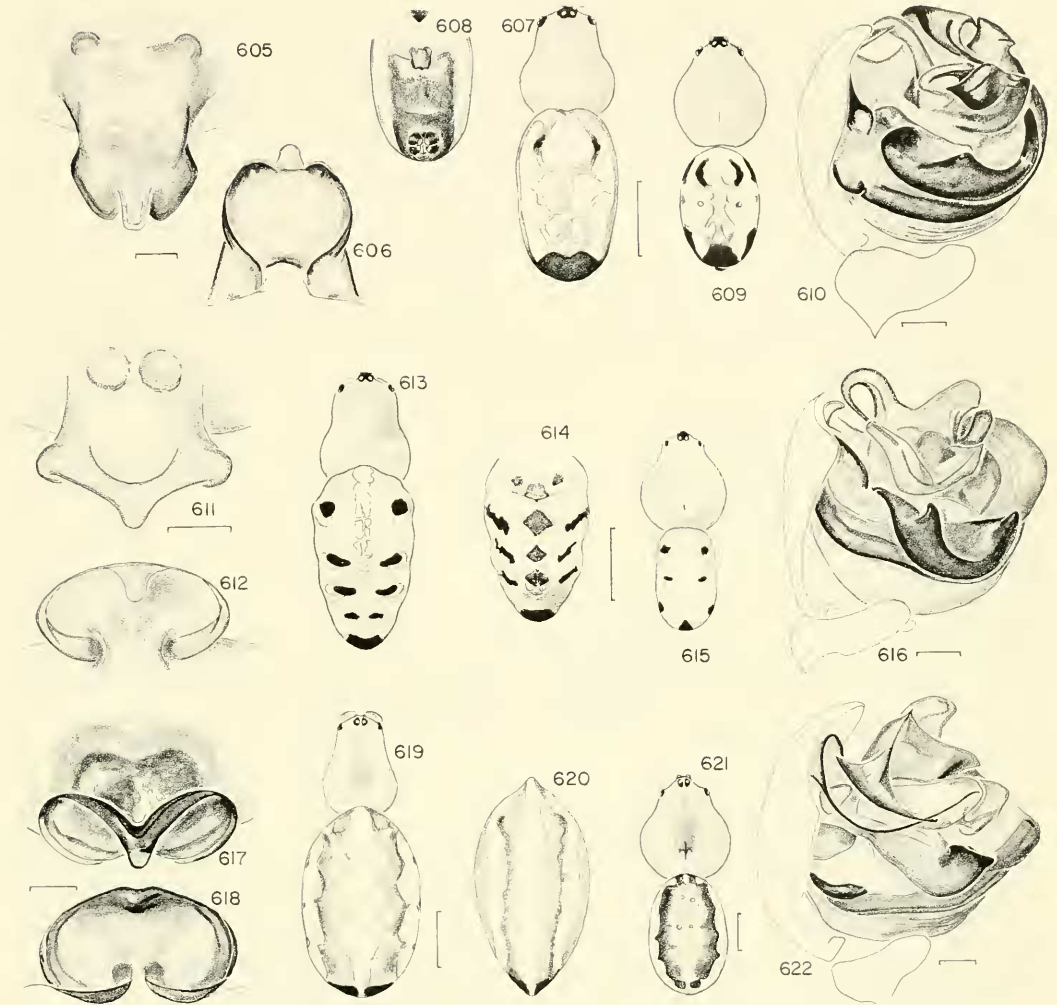
Paratypes. BRAZIL *São Paulo*: Boracéia, 28 Feb. 1967, ♀ (P. de Biasi, MZSP 6122); São Paulo, 21 Dec. 1945, ♂ (H. Sick, AMNH). *Rio Grande do Sul*: São Jacó, Arroio do Meio, 9 Jan. 1985, ♀ (A. A. Lise, MCN); Montenegro, 6 Oct. 1977, 8♂, ♀ (A. A. Lise, H. E. Buckup, MCN); Rio Pardo, 15 Dec. 1976, ♂ (F. R. Mayer, MCN); Triunfo, 20 Oct. 1977, 4♀, 2♂ (E. H. Buckup, MCN), 28 Nov. 1977, 2♀, ♂ (H. Bischoff, MCN 7333); Três Coroas, 15 Dec. 1976, ♀ (E. H. Buckup 4932, MCN); Canela, 3 Feb. 1967, ♀ (A. A. Lise, MCN), 31 Dec. 1973, ♀ (A. A. Lise, MCN 2055); Vila Oliva, Caxias do Sul, 5 Jan. 1976, ♀ (P. A. Buckup, MCN 3697); Parque Estadual de Nonoai, Nonoai, 14 Jan. 1985, ♀ (A. A. Lise, MCN 12810); Igrejinha, Jaquara, 19 Oct. 1967, 3♀, 3♂ (P. de Biasi, MZSP 7154).

Alpaida marta new species

Figures 623–627; Map 5

Holotype. Female from Sierra Nevada de Santa Marta, San Pedro, 1,200 m, Dpto. Magdalena, Colombia, 3 May 1975 (J. Kochalka, MCZ). The specific name is a noun in apposition after the type locality.

Description. Female. Carapace, sternum, legs yellowish white. Dorsum of abdomen with four pairs of black spots, one on each protuberance, and a pair of larger black spots posteriorly with reddish longitudinal streaks broken by greenish areas (Fig. 625); venter yellowish without marks, spinnerets dusky. Posterior median eyes 1.4 diameters of anterior medians; laterals subequal to anterior medians. Anterior median eyes 1.5 their diameters apart; posterior median eyes slightly more than their diameter apart. Abdomen pointed ante-



Figures 605–610. *Alpaيدا silencio* n. sp. 605–607, female. 605, epigynum, ventral. 606, epigynum, posterior. 607, dorsal. 608, ventral. 609, 610, male. 609, dorsal. 610, left palpus.

Figures 611–616. *A. cali* n. sp. 611–614, female. 611, epigynum, ventral. 612, epigynum, posterior. 613, dorsal. 614, ventral. 615, 616, male. 615, dorsal. 616, ventral.

Figures 617–622. *A. nonoai* n. sp. 617–620, female. 617, epigynum, ventral. 618, epigynum, posterior. 619, 620, dorsal. 621, 622, male. 621, dorsal. 622, palpus.

Scale lines. 1.0 mm; genitalia, 0.1 mm.

riorly and posteriorly with four pairs of small lateral humps (Fig. 625). Total length 5.2 mm. Carapace 1.9 mm long, 1.5 wide. First femur 2.1 mm; patella and tibia 2.4; metatarsus 1.7; tarsus 0.7. Second patella and tibia 2.0 mm; third 1.2; fourth 1.9.

Male. Carapace coloration delicate, red-

dish and green. Sternum orange. Legs green. Dorsum of abdomen with two red bands separated by green, green sides and black spots (Fig. 626); venter reddish. Eyes as in female. Second tibiae thicker than first with macrosetae. Total length 4.0 mm. Carapace 2.0 mm long, 1.3 wide. First fe-

mur 1.9 mm; patella and tibia 2.4; metatarsus 1.5; tarsus 0.7. Second patella and tibia 1.7 mm; third 1.1; fourth 1.8.

Diagnosis. The female is distinguished from *A. chickeringi* by the lack of tiny spines on the abdomen (Fig. 625) and from other species by the triangular epigynum in ventral view (Fig. 623) and by the divided median plate in posterior view (Fig. 624). The male differs from *A. chickeringi* by having only one palpal patellar macroseta and having a long filamentous embolus originating from the "top" of the bulb (Fig. 627).

Natural History. The species has been collected in low vegetation.

Paratypes. COLOMBIA *Magdalena*, Sierra Nevada de Santa Marta: W of Cerro Lagila, 1,120 m, 21 April 1975, ♂ (J. Kochalka, MCZ); Serra Nueva Granada, 1,615 m, 7 April 1975, 2♀, imm. (J. Kochalka, MCZ, MNHNP); San Pedro, 1,250 m, 2 Feb. 1974, ♀; above Minca Valley, 880 m, 24 Feb. 1974, ♂ (both J. Kochalka, AMNH).

Alpaida chickeringi new species
Figures 628–634; Map 5

Holotype. Female from Barro Colorado Island, Gatun Lake, Prov. Panamá, Panama, June 1936 (A. M. Chickering, MCZ). The species is named after the collector.

Description. Female. Carapace, sternum, legs yellowish. Dorsum of abdomen yellowish-white; venter with white pigment behind epigynum and around spinnerets (Fig. 632). Legs with some long macrosetae. Abdomen with pairs of humps crowned by spines (Figs. 630, 631). Total

length 6.4 mm. Carapace 2.8 mm long, 2.1 wide. First femur 3.1 mm; patella and tibia 3.5; metatarsus 2.4; tarsus 1.1. Second patella and tibia 2.8 mm; third 1.9; fourth 3.2.

Male. Coloration as in female. Legs with long, black macrosetae. Abdomen with paired humps, none pointed (Fig. 633). Total length 5.5 mm. Carapace 2.5 mm long, 2.0 wide. First femur 2.7 mm; patella and tibia 3.1; metatarsus 2.2; tarsus 1.1. Second patella and tibia 2.3 mm; third 1.8; fourth 2.8.

Note. The pigment distribution on the venter makes it possible to match male and female. The holotype female has a growth injury in the head region and has only five eyes.

Variation. Females vary in total length from 6.4 to 7.4 mm, males from 4.5 to 6.1 mm.

The female holotype and a male from the type locality are described and illustrated.

Diagnosis. The female is distinguished from most *Alpaida* by the tiny pairs of spines on the abdomen and from *A. almada* and *A. sulphurea* by the epigynum, which has a swollen triangular area just anterior to the median lobe (Fig. 628). The male is distinguished from most others by the two macrosetae on the palpal patella and from *A. almada* by the sword-shaped embolus hanging from the "top" of the bulb, almost parallel to the cymbium (Fig. 634).

Paratypes. PANAMA *Panamá*: Barro Colorado Isl., Lago Gatún, Aug. 1936, ♂

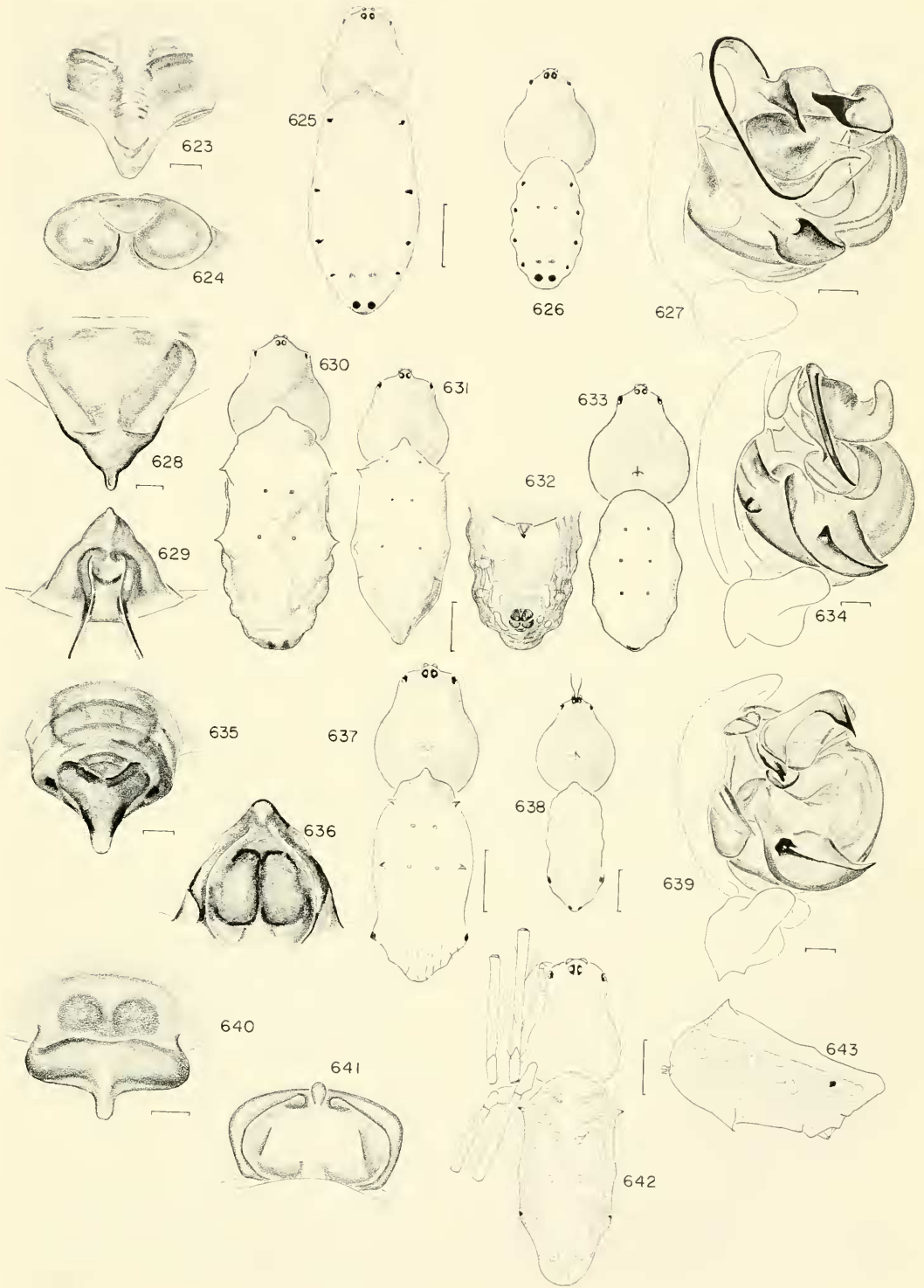
Figures 623–627. *Alpaida marta* n. sp. 623–625, female. 623, epigynum, ventral. 624, epigynum, posterior. 625, dorsal. 626, 627, male. 626, dorsal. 627, left palpus.

Figures 628–634. *A. chickeringi* n. sp. 628–632, female. 628, epigynum, ventral. 629, epigynum, posterior. 630, 631, dorsal. 632, ventral. 633, 634, male. 633, dorsal. 634, palpus.

Figures 635–639. *A. almada* n. sp. 635–637, female. 635, epigynum, ventral. 636, epigynum, posterior. 637, dorsal. 638, 639, male. 638, dorsal. 639, palpus.

Figures 640–643. *A. sulphurea* (Taczanowski), female. 640, epigynum, ventral. 641, epigynum, posterior. 642, dorsal. 643, lateral.

Scale lines. 1.0 mm; genitalia, 0.1 mm.



(A. M. Chickering, MCZ); June 1950, ♀ (Zetek, MCZ); Forest Reserve, Aug. 1936, ♂ (Zetek, MCZ). LESSER ANTILLES *Trinidad*: Simla, 12 Dec. 1954, ♂ (A. M. Nadler, AMNH). GUYANA *Bartica Distr.*: Kartabo, 1928, ♂, ♀ (AMNH). COLOMBIA *Nariño*: La Planada, 1,800 m, 7 km S Chocónés, nr. Ricaurte, July 1986, ♂ (W. Eberhard, MCZ). BRAZIL *Mato Grosso*: 260 km N Xavantina, 400 m, Feb.–Apr. 1969, ♂ (Xavant.-Chachimbo Exp., MCZ).

Alpaida almada new species
Figures 635–639; Map 5

Holotype. Female from Fazenda Almada, Uruçuca, Bahia, Brazil, 27 Nov. 1977 (J. S. Santos, MCN no. 10492). The specific name is a noun in apposition after the type locality.

Description. Female. Carapace, sternum, legs yellow. Dorsum and sides of abdomen white, small black spot on posterior lateral humps (Fig. 637); venter without pigment except for a pair of white patches behind genital groove. Anterior median eyes one diameter apart, posterior median eyes 1.5 diameters apart. Legs with many macrosetae and smaller setae. Abdomen with two pairs of lateral thorns, a posterior pair of lateral humps, and an anterior median hump; posterior with some setae (Fig. 637). Total length 6.8 mm. Carapace 2.7 mm long, 2.2 wide. First femur 3.1 mm; patella and tibia 3.7; metatarsus 2.8; tarsus 1.2. Second patella and tibia 3.1 mm; third 2.0; fourth 3.4.

Male. Coloration as in female, except sides of abdomen with little white pigment (Fig. 638). Carapace with two long macrosetae from between median ocular quadrangle. Anterior median eyes and posterior median eyes each slightly more than their diameters apart. Legs with many long macrosetae. Total length 5.5 mm. Carapace 2.7 mm long, 1.9 wide. First femur 2.7 mm; patella and tibia 3.1; metatarsus 2.0; tarsus 1.1. Second patella and tibia 2.3 mm; third 1.8; fourth 3.1.

Note. The male's right palpus has embolus tip covered by part of conductor, perhaps a piece that breaks off when mating.

Diagnosis. The female is distinguished from *A. chickeringi* in posterior view of the epigynum by two large seminal receptacles visible through a wide transparent median plate (Fig. 636). The male, like *A. chickeringi* and unlike most species, has two patellar setae on the palpal patella; unlike *A. chickeringi*, the palpus has a short embolus and a large terminal apophysis ending in a distal hood (Fig. 639).

Paratypes. BRAZIL *Bahia*: Fazenda Almada, Uruçuca, 27 Nov. 1977, ♀ (J. S. Santos, MCN 10163), 26 Nov. 1977, ♂ (J. S. Santos, MCN 10344).

Alpaida sulphurea (Taczanowski),
new combination

Figures 640–643; Map 5

Nephila sulphurea Taczanowski 1873: 148. Female holotype from Cayenne, French Guiana (PAN), examined.

Note. Bonnet (1958) and Roewer (1942) consider this name a synonym of *Nephila clavipes*.

Description. Female. Carapace, sternum, legs, yellow-white. Dorsum of abdomen white, sides with white spots and some black spots inside the white (Fig. 642); venter without pigment. Anterior median eyes less than their diameter apart, posterior medians a little more than their diameter apart. Abdomen longer than wide, with an anterior lateral spine on each side (Fig. 642). Total length 5.5 mm. Carapace 2.0 mm long, 1.5 wide. First femur 2.3 mm; patella and tibia 2.9; metatarsus 2.0; tarsus 0.9. Second patella and tibia 2.3 mm; third 1.4; fourth 2.4.

Note. This species must have been yellow when Taczanowski named it.

Diagnosis. This female is distinguished from *A. chickeringi* and *A. almada* by the long transverse lip on the epigynum (Fig. 640).

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